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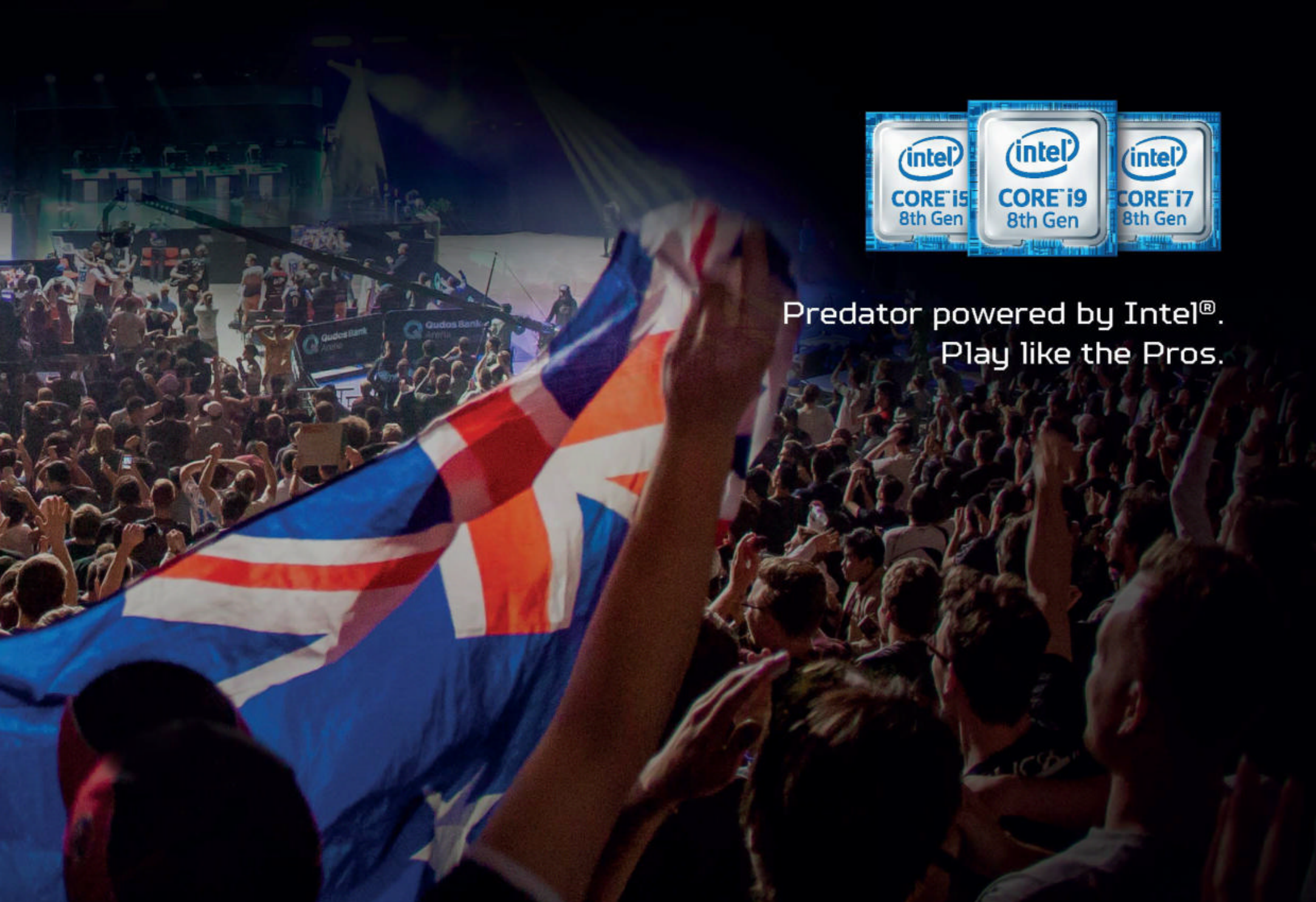

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ON THE COVER

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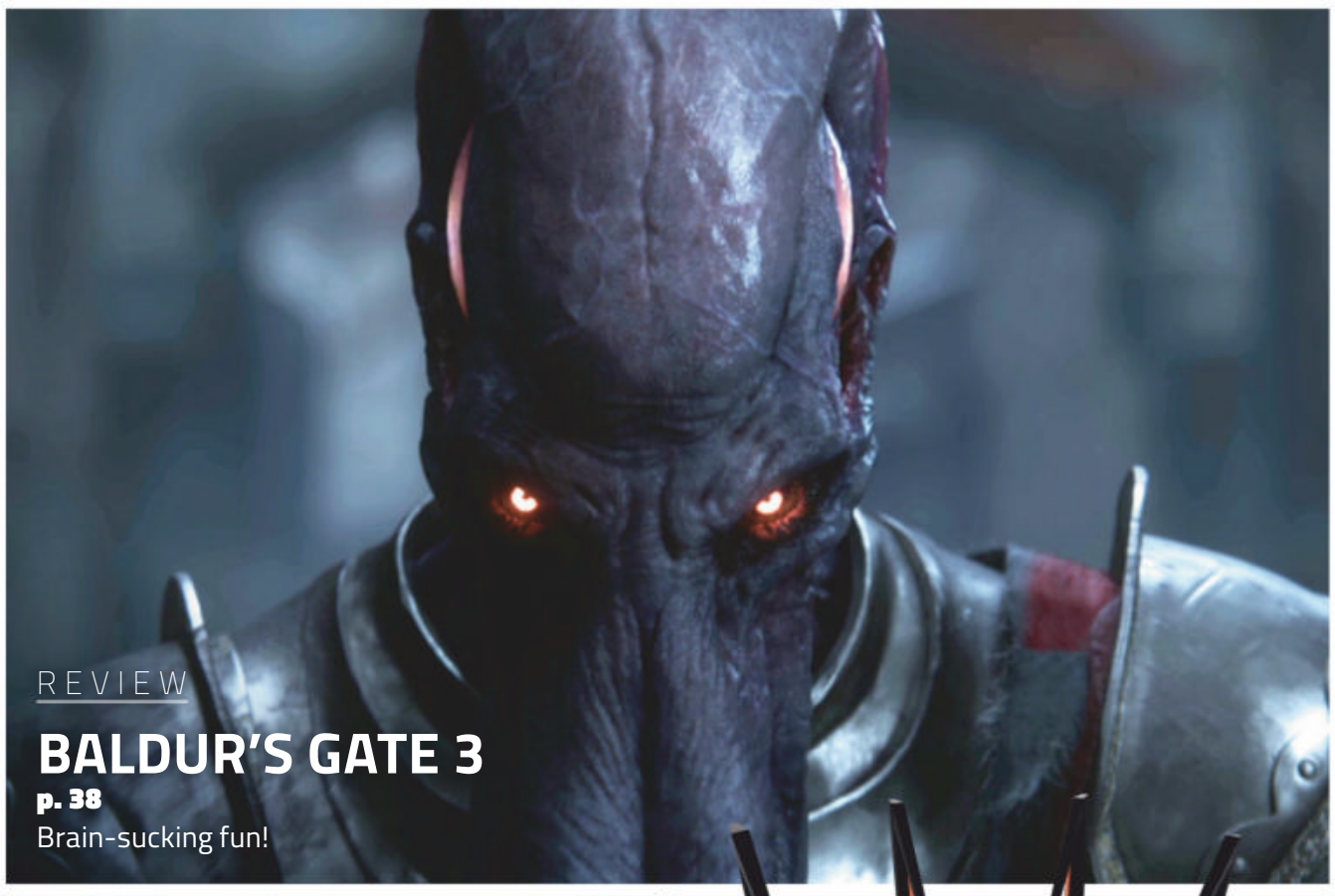
Can you ever have too many guns?



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We've got some hot stuff this month!

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I WANT TO BELIEVE

Borderlands 3 may be our cover story, and it may be looking like the best Borderlands game yet... but it's not what's floating my boat this issue.

That is – once again – Cyberpunk 2077.

It's odd to keep coming back to a game when it's this far from launch, but calling CP2077 one of the most anticipated games of the year is a bit of an understatement. On top of that, it's a game that is looking to be rather huge in scope, so it's worth going back; this issue, we look at some of the room for roleplaying in the game, from multiple ways to approach problems and NPCs, to the different roles you can play in the game.

I love the pen and paper game, and I love the genre in general. Reading William Gibson's Neuromancer when I was a teen changed my life, and the chance to now even more immersively explore this new cyberpunk future is kind of thrilling. I've not gone completely fanboi, though; I'm still unsure of the way CD Projekt Red is handling some aspects of the game, and to say its handling of relations with the trans community has been strained is somewhat of an understatement.

But I have hope it will come right in the end, and I am enjoying every new piece of the game that we see; so if another chance to look at the game comes down the pike, you can be sure we'll take it.

David Hollingworth
Editor

PCPP | Game News

TIM WILLITS IS LEAVING ID SOFTWARE

He's been with id since 1995.

Tim Willits, who joined id Software in 1995 and rose to become studio director under new parent company ZeniMax Media, announced last month that he is leaving the company after this year's QuakeCon.

Willits has design or production credits on virtually everything id Software has done from Ultimate Doom, for which he served as a level designer, to the Doom 3 BFG Edition in 2012, his first as studio head. He's had an impressive run since then, overseeing the resurrection of the original Quake, Rage, and in particular, Doom. Less happily, he also wound up in a bit of a beef with other id veterans in 2017 when he said that he'd come up with the idea to make maps specifically for multiplayer modes, a claim his fellow developers rejected.

"All of the games currently in development are in very good hands, my departure will not affect any planned releases. id Software is packed full of amazing talent that will continue to develop (long into the future) some of the best shooters in the world," Willits said in followup tweets. "After QuakeCon I will announce my future plans, where I am going, and what new exciting things I am doing. Stay tuned."

GEARS 5 HAS AN IMPRESSIVE SUITE OF ACCESSIBILITY FEATURES

Though, some of the features require you to play on the easiest difficulty.

Players participating in Gears 5's recent multiplayer tech test have noticed the game is sporting an impressive suite of accessibility features. As showcased by Ablegamers program director and community specialist Craig Kaufman on Twitter, Gears 5's accessibility reach is extensive compared to most games.

To start, Gears 5 has several features that are becoming more common among AAA games, like color blind modes and enhanced aim assist (here it's a "target lock"). Though, it also has features that are still pretty rare, like options to adjust the size of subtitles and make button mashing moments require a hold instead.

It even has both speech-to-text and text-to-speech for multiplayer chat. I'm very curious to know how user friendly and accurate the program is, but it's cool to see it included at all.

It's also worth mentioning the options to swap the analog sticks while aimed and move all movement to a single stick. Players with particular needs require unique control functions depending on their situation. If, for instance, you're more dexterous and precise with your left hand, being able to smoothly transition to running and aiming on the left stick could make all the difference.

RAINBOW SIX QUARANTINE EXPECTED TO LAUNCH BEFORE APRIL 2020

And it'll have 'the proven gameplay of Rainbow Six Siege Outbreak.'

We haven't heard anything about the co-op Siege spin-off Rainbow Six Quarantine since its announcement at E3 2019, but thanks to the power of investor calls, we have a better idea of its release date. According to Ubisoft CEO Yves Guillemot, Rainbow Six Quarantine will release before the end of the fiscal year. That translates to any time before April 2020.

Quarantine was initially announced as an early 2020 game, but this narrows in the date further. As Game Informer pointed out, Ubisoft has a pattern with its releases in the beginning of the year. The company usually releases a game in either January for February, and Quarantine is the most likely candidate for that slot.

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PATRIOT LAUNCHES AN AFFORDABLE SATA SSD LINE IN CAPACITIES UP TO 2TB

Bucking the PCIe 4.0 trend (for now).

Over the past several weeks, we've seen a handful of SSD announcements that focus on faster speeds enabled by supporting the PCI Express 4.0 bus. Patriot will eventually get around to launching a PCIe 4.0 SSD of its own (more on that in a bit), but in the meantime, it's rolling out a new SATA line that is much more affordable.

Patriot's new P200 series comes in 256GB, 512GB, 1TB, and 2TB capacities. Only the first two are in stock and available to purchase right now, but here's how pricing breaks down for all four:

- Patriot P200 2TB SSD – US$239.99, Patriot (~$0.12 per gigabyte)
- Patriot P200 1TB SSD – US$110.99, Patriot (~$0.11 per gigabyte)
- Patriot P200 512GB SSD – US$49.99, Amazon (~$0.10 per gigabyte)
- Patriot P200 256GB SSD – US$31.99, Amazon (~$0.12 per gigabyte)

The 512GB models offers the best value, as it relates the cost per gigabyte, though all four are in a similar range. Pricing is in line with the competition, including Samsung's 860 Evo, which we still consider the best SSD for gaming (from a price/performance standpoint). We'll also have to see how street prices trend over time, as there are quite a few 1TB class SSDs now selling for a similar price point.

STADIA DIRECTOR: WE'RE GOING TO 'FEEL GREAT' ABOUT ALL OUR GAMES MOVING TO THE CLOUD

Stadia director of product Andrey Doronichev emphasized the benefits of the cloud in a Reddit AMA.

Reddit AMA featuring Stadia director of product Andrey Doronichev that took place yesterday didn't serve up a lot of new information about what we can look forward to in Google's upcoming streaming games service. But it did offer a little bit of insight into what the service is (and is not), and what will happen to your games if Stadia goes the way of Google Plus.

"To be clear, Stadia Pro is not 'Netflix for Games' like some people have mentioned, a closer comparison would be like Xbox Live Gold or Playstation Plus. The Pro subscribers get 4K/HDR streaming, 5.1 sound, exclusive discounts and access to some free games. Roughly one free game per month give or take," Doronichev wrote.

Pro subscribers who let their subscriptions lapse will lose those free games, he exaplined, but will get them back if they re-sub. They will not be given any free games they missed while they were unsubscribed, however. Actual free-to-play games may be coming to the platform as well, but Doronichev said Google isn't ready to share information on that just yet.

Aside from the free games for Pro subscribers, Stadia users will have to purchase their games through the service – hence the 'not Netflix' comment – and while pricing models haven't been announced yet, Stadia head Phil Harrison said last month that he expects they'll cost the same as on any other platform or storefront. So what happens to those games (and that money) if Stadia is discontinued?

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Working As Intended

Wargaming has been tinkering with the in-game economy of World of Tanks, and the community is worried...

I caught up with an old work chum recently, and he asked what games I was playing these days. I replied: "I'm back on my bullshit." He understood instantly: "You're playing World of Tanks."

My return had followed a very long absence. I had logged in to sample the new Tier VIII mega-map grind-mode, 'Frontline'. But I found that in my time away so much else had changed.

There's now a sparsely-populated Australian server, with bots to help pad out games at tiers I to V. There's a new game engine, and new map-specific music (the Mongolian throat-singing on Ghost Town is particularly nice).

Occasionally you'll be offered limited-time missions that can pay out surprisingly large quantities of XP – I took advantage of one such 40,000 XP windfall to skip the entire stock grind of the VK 30.01 (P). Then there are 'Personal Missions', linked chains of maddening tasks that eventually reward you with rare premium tanks and coveted female crew members.

Play an exceptional game and you might score one of the new 'Rewards For Merit'. These randomised bundles of goodies include 'Blueprint Fragments' that knock a substantial percentage off the XP you need to accumulate to research new tanks. You can also score custom crew skins, and 'Crew Books' that reduce the insufferable grind involved in gaining new crew skills.

JAMES COTTEE would never be so gauche as to buy a solid gold tank. A solid gold bust of Chris Roberts, though...

There's now a dizzying array of meta-game elements to distract you from the shortcomings of the game itself.

But the most innovative new feature to roll out in recent years is the Black Market, a special in-game shop where players could buy a variety of rare and sought-after Premium tanks for vast quantities of Gold or Credits. The Black Market was a temporary sales event. Each tank was available for a window of just 12 hours – and each was available in strictly limited quantities.

Players had a chance to snag rare tanks like the Type 59 G, a ridiculous solid-gold replica of the iconic Cold War-era MBT of the Chinese army – the tank that infamously crushed the 1989 student protests at Tiananmen Square.

Just 500 Type 59 Gs were put up for sale on the US server, and they sold out in 14 seconds flat. Each cost around US$100, and the Yanks couldn't part with their money fast enough.

The Black Market was clearly a success. A leading opinion in the community is that these limited time deals were introduced to drain currency from the in-game economy; in particular, stashes of gold lying around unused from last Christmas's loot boxes. I would posit a different hypothesis. I believe that the Black Market was created to milk whales, and milk them hard.

For years it has been standard practice for Wargaming to make its premium tanks available for strictly limited periods. After that, they go back in the vault! Who knows when they'll be available again? Better not risk missing out!

But the key to persuading mega-whales to really dig deep is to release premium vehicles for a strictly limited time, AND in strictly limited quantities… that's the magic formula that has grossed Chris Roberts well over US$200 Million (and counting). In the case of Star Citizen, a tsunami of whale milk has been extracted from a relatively small cohort of space sim super-fans; some estimate their number being relatively tiny, perhaps as few as 5,000.

World of Tanks has been a tremendous success for Wargaming; well over 100 million accounts have been created over the years for this free-to-play sensation. But if active player numbers were to decline precipitously, the only way to maintain profitability may well be to pursue a strategy of cultivating and milking the fattest and juiciest of the mega-whales.

Hopefully, that's a choice Victor Kislyi and his lieutenants won't have to make. But many of the changes made to World of Tanks in recent years have threatened to drive away long-time fans. Like the addition of high-speed wheeled scout vehicles (the community refers to them as 'clown cars'). The new line of extremely small high-tier British light tanks could well elicit a similar wave of discontent.

Likewise, the recent addition of a feature that lets you block the map you hate the most is a tacit admission that some of the maps in rotation are diabolically bad. Few tears would be shed if the Paris and Minsk maps were deleted forever.

To be fair, Wargaming has been listening to some community requests. The upcoming Version 1.6 update will finally get rid of friendly fire, so with any luck team-killing and griefing will soon be a thing of the past. But this is a critical time for World of Tanks. We'll soon see if Wargaming has what it takes to sustain mass market interest in their flagship title, or if it will devolve into a whale-milking operation that would make Chris Roberts blush. PC

Nothing says conspicuous consumption like a golden tank with dragon etchings on the barrel and flanks...

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THE HIDDEN DETAILS OF DESIGN.

Space Odyssey

No Code's Creative Director Jon McKellan talks about what he learned recreating a space station for Observation.

MALINDY HETFELD

BUILD-AN-ASTRONAUT

1 "To simulate actress Kezia Burrows in zero G using mo-cap we used a system where we'd capture her limbs separately and then blend them together. Chris Wilson, lead animator, would also do swimming motions lying down on a stool."

HOME OFFICE

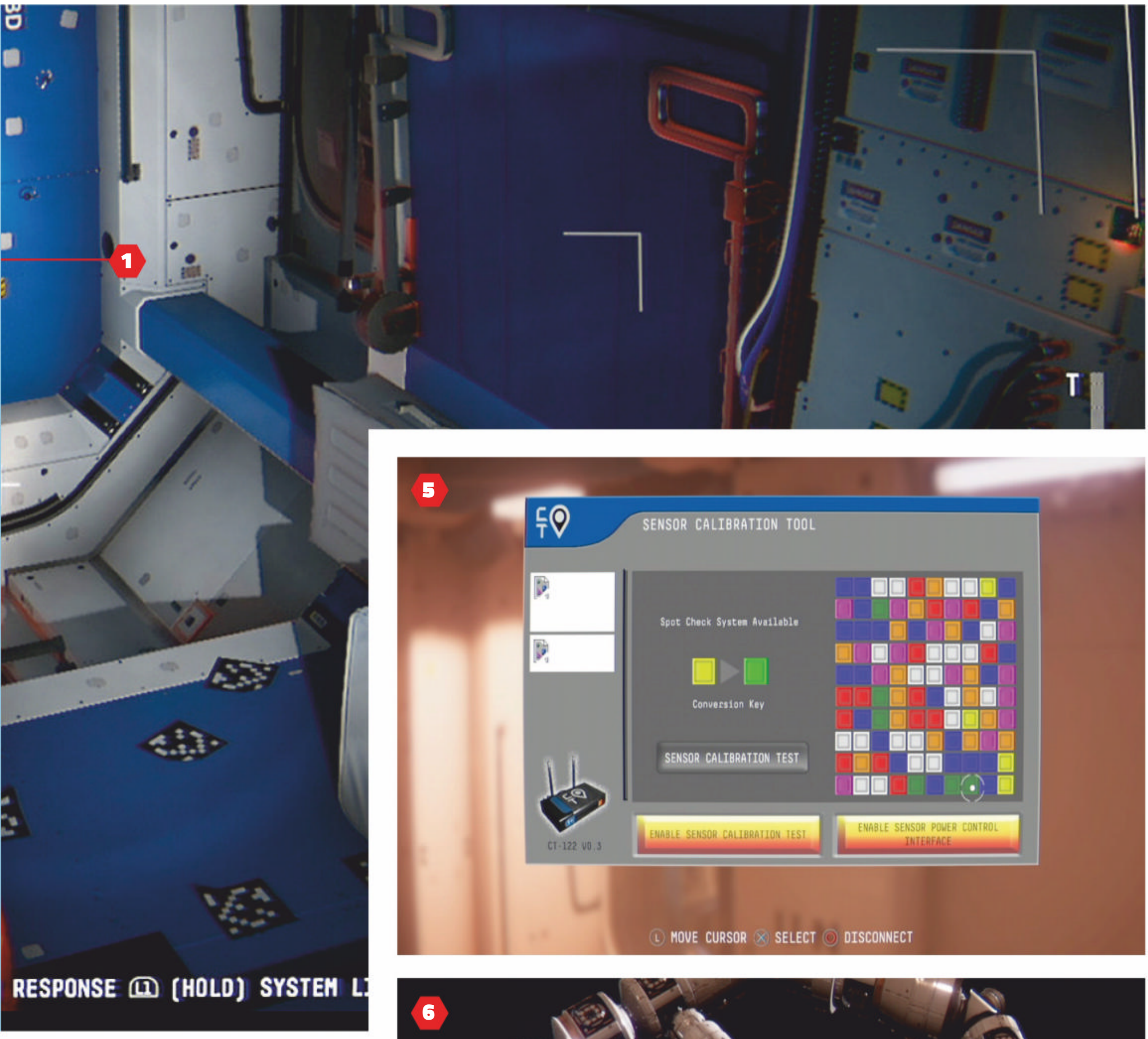
2 "On the actual ISS, laptops are just stuck to every surface at every angle. Most of these laptops run on DOS and they run one specific programme only, so you don't lose lots of crucial data in case of a malfunction."

FOUND FOOTAGE

3 "Cameras on the station are all of the same quality because we wanted tech to feel unreliable as a whole, to give you a sense of unease. The interference and glitches make it feel like they might fail at any minute."

LITTLE HELPER

4 "The spheres are based on real technology. Moving around in them can be disorienting because you're suddenly a spherical body experiencing zero G, which is simulated through the camera speed and the drag before you come to a full stop."



WORK IT OUT

5 "Most of the in-game tech is based on how it looks and handles on the real station. The puzzle is that you've got to work out how to handle an interface that a trained astronaut had years to get used to."

THE MAIN CHARACTER

6 "We did a lot of research on the ISS over a six-month period. There's many books which detail the building and technology of the ISS. NASA are also incredibly open with their material, their entire photo library is free to use."

Bright Futures.

Because the best things in life are at Freeplay.

At Freeplay's awards night, Director, Chad Toprak, raised a point that made me feel old. He said that, especially because it has been running for 15 years, this vibrant indie game festival attracts 'generations' of people working in and around games. These days, I'm definitely a videogame mum, possibly a grandma, if you've seen some of the games my composition students are working on. Certainly, I was tremendously impressed by how warm and welcoming Freeplay was this year. People of all ages, genders and backgrounds mingled effortlessly, sharing knowledge and ideas.

Earlier in the evening, Jacob Leaney (of Monster Mansion) introduced himself to me as a relative newcomer to games. I was still smiling over the branching musical he and Jade Stewart improvised at the conference, based on audience participation. The protagonist's journey from harried office worker to the founder of a boutique brewery was an emotional rollercoaster. Jacob asked me about the history of the indie game scene in Australia and I told him that I rarely saw any independent games when I started writing for PC Powerplay in 2007, let alone anything Australian. That was only 12 years ago.

Videogames have matured rapidly in recent years, however, with hundreds of local teams working at the intersection of art, experimentation and play. At the conference, Jaz Hee-jeong Choi examined the design of urban systems and how they often fail to care for those who engage with them, even when care is the aim. She even mentioned a mirror designed to remain opaque until its intended users - cancer patients - smile. It kind of makes sense, until you are dying and just want to brush your hair. Incredibly, some of her recent work in working with homeless communities was to offer people a hand-drawn portrait in colours and styles they liked as a personal way of keeping and sharing their stories.

I also had the chance to play Noise Drawers, by Maize Wallin, which can be found at maizewallin.com/noise. Presented as a filing cabinet in virtual space, I rifled clumsily through drawers, trying to locate musical parts that would match a texture I had in mind. It was like a large metaphor for composing music, really, with each drawer revealing a new sound, sometimes altering based on how quickly, or how far, the drawer was pulled out over the length of your arm. Maize then performed evocatively with their instrument, taking us on a seamless, aural journey through a range of interconnected moods, including humour and sadness.

MEGHANN O'NEILL also had the strange opportunity to play the theme from Dragon Age 2 on her "human hand ocarina" for an audience at Freeplay. Luckily everyone clapped.

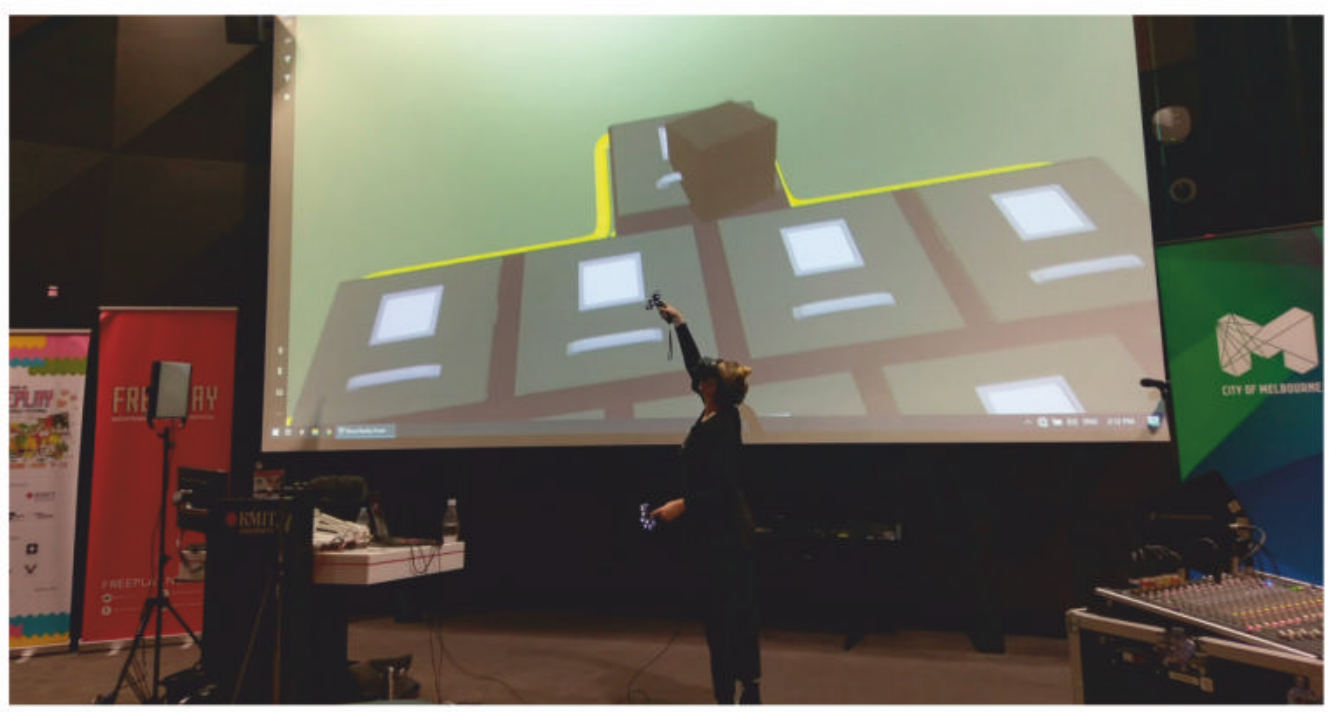
Honestly? I was expecting the conference to be more explicitly focussed on game design; possibly just a bunch of Unity tutorials, but this space "around games" was far more inspiring. Holly Gramazio raised forty ways to NOT engage with games, and the creation of games, including, "You can lie about creating a game," revealing that the territory claiming game she said she'd invented, made by the shadows created from the roof of the British Museum was, in fact, not something she'd invented. That this lie was so plausible was a testament to the imaginative games she has created, in physical spaces.

> "Jacob asked me about the history of the indie game scene in Australia and I told him that I rarely saw any independent games when I started writing for PC Powerplay in 2007."

Holly also challenged us to reflect on how people will engage (regardless) with the aspects of your game that you don't design or include. Certainly, over the last several years, I've played Australian indie games and longed for Indigenous representation. Phoebe Watson, from the Yarrer Gunditj clan of the Maar Nation, delivered an exceptional account of her role on Chaos Tavern, by Dragon Bear Studios; "to ensure any Indigenous inspired elements of the game are appropriate and presented in a respectful manner."

After Freeplay, she told PCPP, "I helped create the character Vyanna. I wanted her to be true and proud of her Indigenous roots but not in a stereotypical way we always see. Chaos Tavern's world takes inspiration for how Indigenous communities run, where the elders are the knowledge holders and very highly regarded and respected."

As Freeplay started to come to a close, we viewed a moving recording from Rosa Carbo-Mascarell, about how she came to create an idle game in which a flower grows, for Rami Ismail's Meditation Games project. If the flower needs intervention, you can touch it. I won't retell her story - Freeplay's talks will be archived online. But she also raised hypothetical contexts for the creation of deeper games, including exploring the death of a grandparent. As a young videogame grandma, I'm not quite ready to leave games yet, but Freeplay is timely reassurance that the future is in great hands. PC



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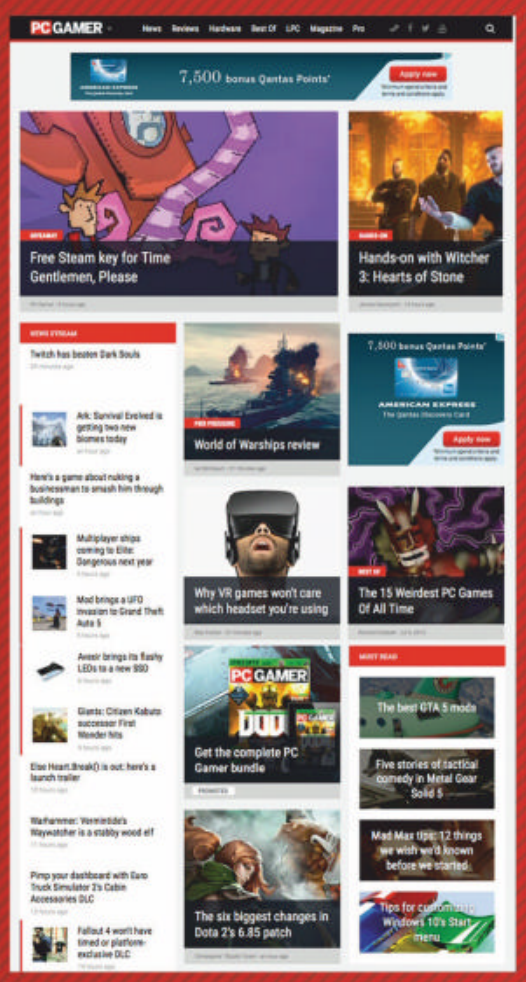
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A collection aside

As is often the case, **MEGHANN O'NEILL** has been compelled towards adventures and stories, like a tiny ship on the great rivers of some unknowable Nebula (that will make sense as you read on, we promise.) Even the purely mechanical game, this issue, sent her imagination on a journey. Much of this content is also 'choose your own price', so you can enjoy it for free, if you'd like. And three of these games are from Australian/New Zealand, two were finalists in the Freeplay awards and one even won. We hope you enjoy them.

HEAVEN'S VAULT

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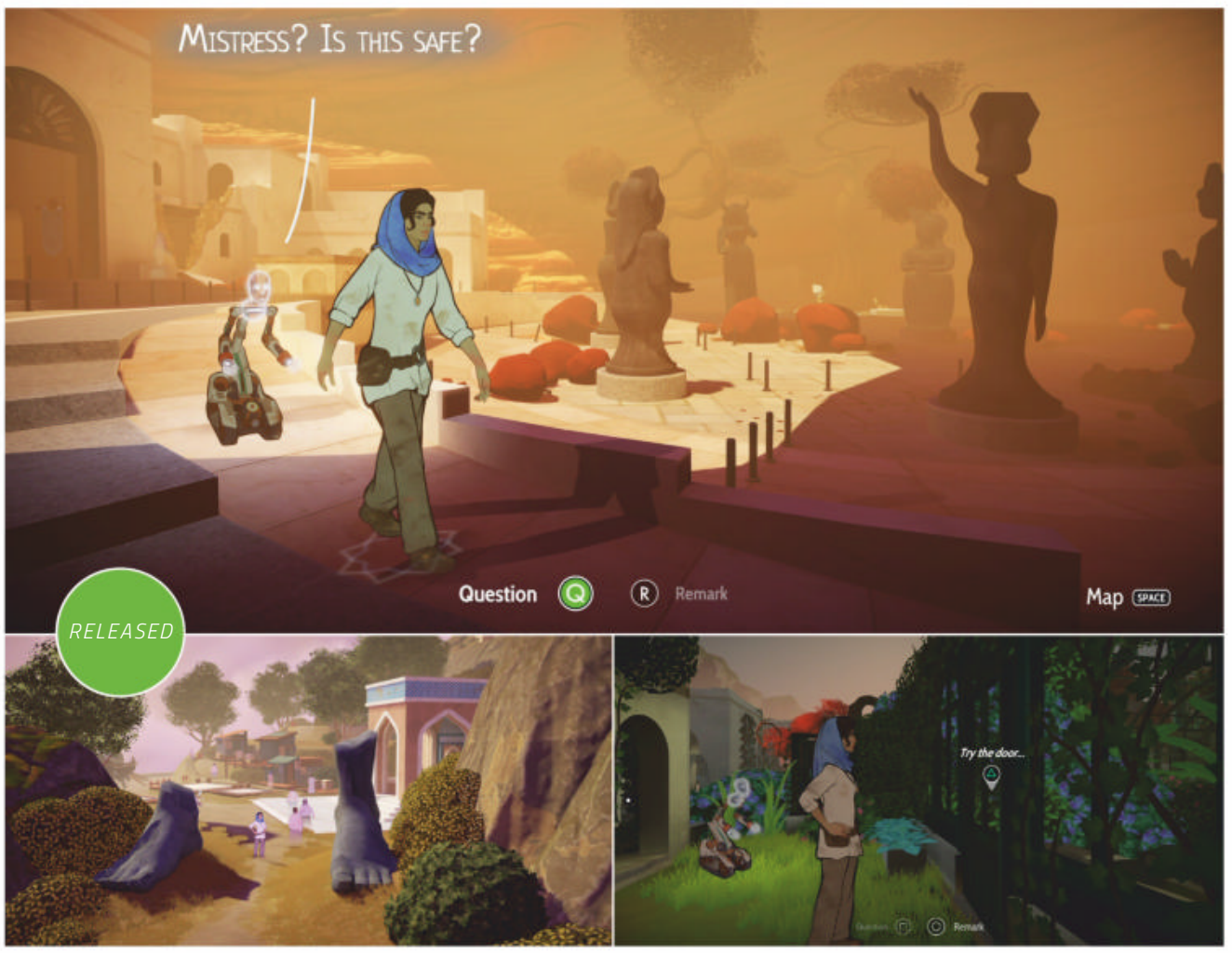


I love stories involving a person (and their robot) wandering the desert. Blame independent American film, Everything Beautiful is Far Away, perhaps. There's just something so dissonant about machines on sand, as if there should be an explanation for why this unlikely context has arisen, yet you can't quite grasp it. Heaven's Vault is not set in an ordinary desert, either. Aliya Elasra and her unlikely companion, Six, visit a Nebula's arid "moons", via a network of "rivers" made of hydrogen, oxygen and other gases. Incredible, right?

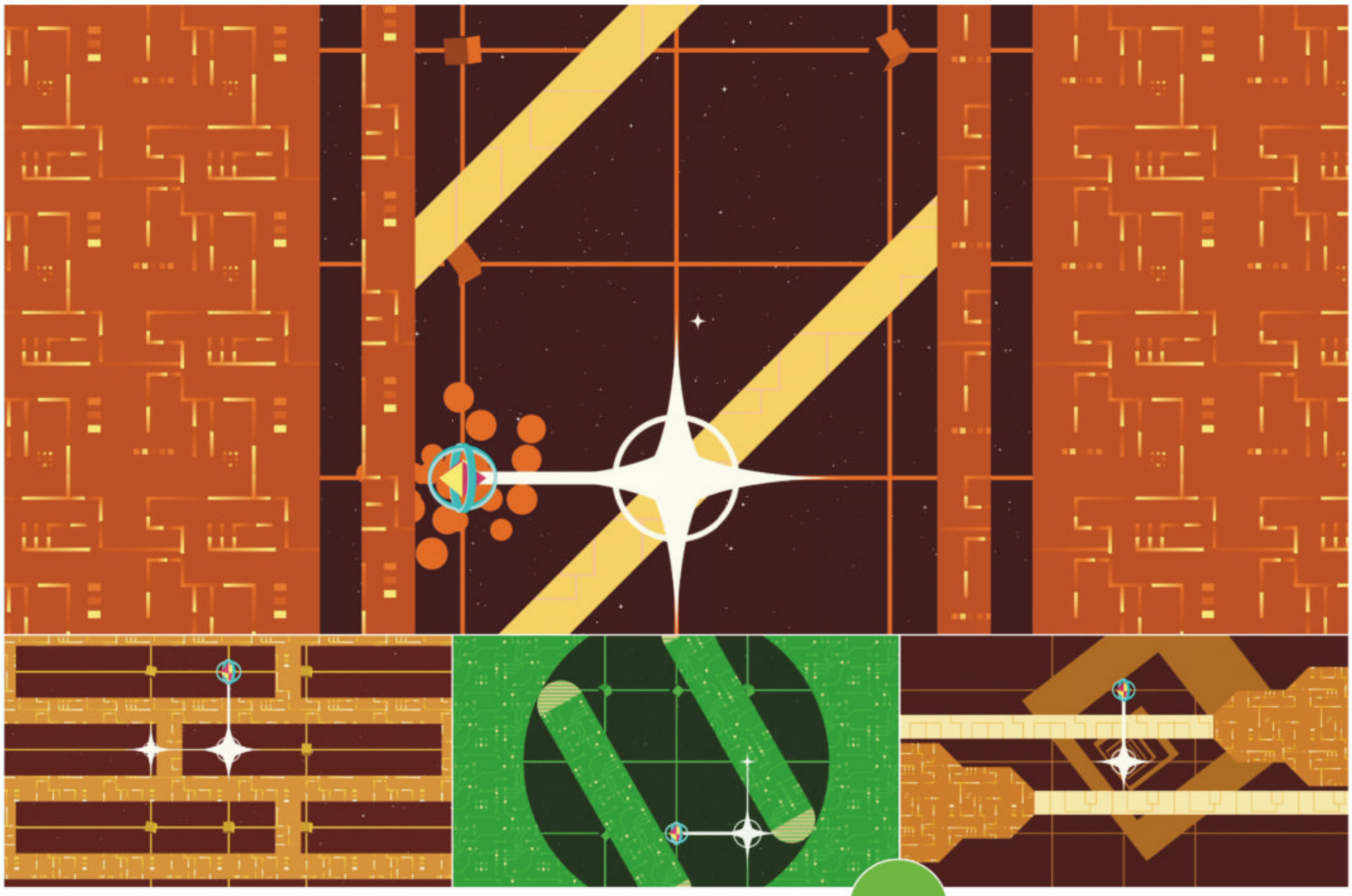
Moreover, you're an archaeologist, but for a university of cultists who believe that time is a loop, so you're also (if they're correct) unearthing the future. Six has been chipped from a "wall on the lower levels", its memory erased. A researcher from the university has gone missing. A girl, on a far-flung moon believes that traversing rivers makes you wicked and impure. Many doors aren't designed to open, they're symbolic places to teleport from. There are goddesses, communities, wellsprings, gardens, mines and much more, to explore.

The setting is clearly amazing, so how do the mechanics fare? Dialogue works well, for starters. You can regularly choose to remark on a current situation, question Six, or engage with other characters. Conversation unfolds organically, based on what you've recently discovered or where you're travelling to. It's like having a whim for what kind of thing to say, then that being expressed by the words that Aliya says next. Other characters may also ask you a question which you may answer with a question, general reply or scripted reply.

Given there's a vast amount of walking or sailing between places in Heaven's Vault, dialogue serves up a glut of clues, context and backstory. In fact, perhaps travel is meant to give you something to do while you chat. Certainly, minor obstacles, like a locked door, can usually be overcome by taking another route to your goal or finding a useful object nearby. You're sometimes presented with Telltale-style choices, the consequences for which are pleasantly obscured. I was often unsure of what may have happened if I'd chosen differently.

> "The game will often tell you when a guess is correct, while also allowing you to make, and link together, gigantic mistakes."

There's also a strong focus on deciphering inscriptions. As you explore, you'll find written language, dating from different eras, and piece together guesses about what things might say. Some solutions seem obvious, based on context, which then help you to decipher related inscriptions elsewhere. The game will often tell you when a guess is correct, while also allowing you to make, and link together, gigantic mistakes. It's truly joyful to find yourself almost understanding words and phrases, before Aliya makes her guesses. Somewhere near to what I thought was the end of Heaven's Vault, I started watching Let's Plays and reading Steam's forum. I was surprised, not only by the different, minor routes people had taken, but also by how interpretations of this dry, but nonetheless rich, setting vary. I'm no archaeologist (in real life), but I imagine history is a complex thing to accurately pin down. I strongly suspect I'm not done with this game yet, nor are many other players. Can the inscriptions be conclusively solved? I imagine so, but not without an historic effort.



RELEASED

JUMPGRID

DEVELOPER IAN MACLARTY • US$5
http://ianmaclarty.com/jumpgrid/

I have been on a journey. My dance partner tried to murder me with swirling lasers. I dodged around the beautiful debris of a disintegrating space robot. I found treasures in the shadows of an incandescent pyramid. I was consumed by a heedless moon and crushed in a prism of glass. These things didn't happen explicitly. I imagined them, from colours and movement. Jumpgrid isn't precisely how I remember an afternoon in an 80s arcade, but it is a vivid conjuring of related experiences; restless excitement, twitching fingers and imagination.

The Australian indie games scene is old enough now for designers to have released multiple games. We've even seen sequels and prequels. I generally expect to find similar aesthetics or mechanics when I play "the next" of someone's games, yet Ian MacLarty's are the exception. If you've played platforming-Pollock-game, Action Painting Pro, or colour-flipping Dissembler, or anything else on ianmaclarty.com, just know that McLarty's signature is simplicity and elegant design, rather than any genre or style of game.

In many ways, Jumpgrid can be summarised very easily. Collect nine cubes from a 3x3 grid, then escape through the middle location. Don't get hit by moving objects or teleport to inside of an object. That's it. Frankly, I'm amazed by how much more there is to it, though. I've played this for several hours and I'm not even slightly bored. I'm learning, improving, feeling strong, feeling smart, being amazed that MacLarty is bringing even more ideas to meaningfully flesh out this humble idea.

Some levels are rhythmic, though it's not a rhythm game. More, it's counting one, two, three, hesitate, one, two, three, hesitate (or some other slightly musical pattern), when you've seen a route around flowing, lethal formations. Other levels are chaotic. Danger is here. You need to go there. You can teleport to safety but only at the split second neither location is blocked. Still other levels are like a mad game of Simon Swipe. You can't possibly see safety and react, so you learn the sequence of safe places to be, by dying repeatedly.

Knowing which of these approaches to use isn't entirely straightforward, either. There are multiple solutions to many levels, depending on how quick your reflexes are. This is an extremely hard game. Somewhere in the second quadrant, I found that you can slow the action down at any point, if you're stuck. I'll be honest. I completed a lot of the game on 60% speed, before dropping it even lower for the boss fights, which are punishing and relentless. And I still feel like I need to ask a doctor about my blood pressure.

Jumpgrid is effortlessly nostalgic and surely impossible (at speed), although I find myself wanting to try, even if it's only to raise the percentage speed by a couple of integers here and there. Each level has been crafted with care, to ensure the timing and movement of pieces is exactly what McLarty intended it to be. Unlike his other games, it's as if he's saying, "You can't beat this," then hurling forth old memories of arcade games as you strive for some desperate thing; a high score, progression, beating your boyfriend at Galaga, even once.

MID 2019

CHOOK AND SOSIG: WALK THE PLANK

DEVELOPER ARMOR GAMES STUDIOS • TBA
https://armorgamesstudios.com/games/chook--sosig-walk-the-plank

Adventure games are the ultimate in handcrafted experiences. Sure, your story may branch, based on choices made, but it's not like they're ever going to rely heavily on procedurally generated content (excluding some experimental text adventures on itch.io which may prove me wrong, as well as cross-genre titles on Steam). Otherwise, when playing an adventure, the designer is telling you a specific story. In Chook and Sosig: Walk the Plank, this process intensifies, because the action occurs via a board game, between friends.

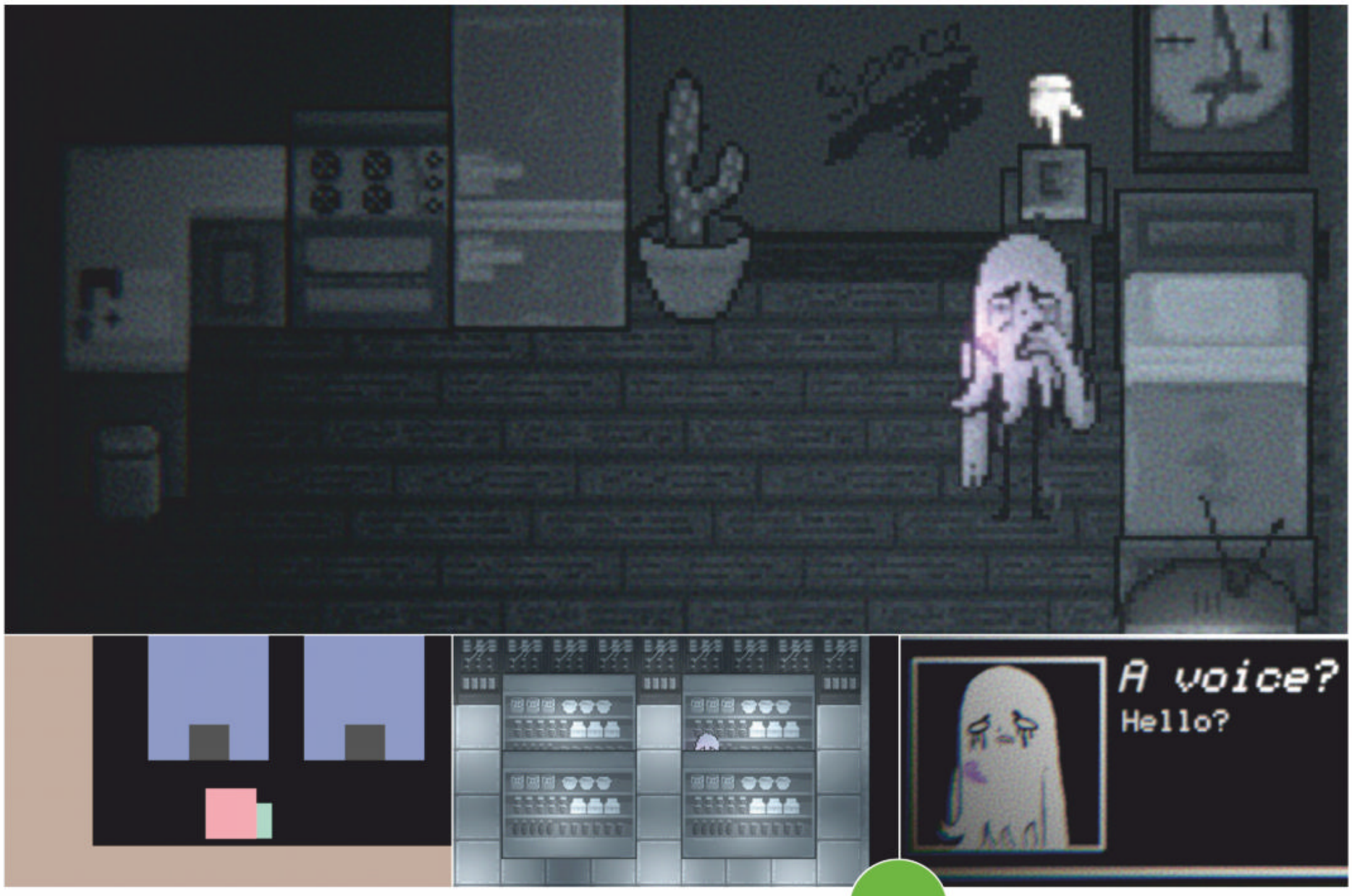
Why do you sail to a goblin island? In one of several amusing cutscenes, the game master reveals they lost their pirate pieces but still had goblins. Can another player add their dinosaurs? No. At least, not in the free demo available on itch.io. I don't always include unreleased games in the indie pages, but I do like soon-to-release games that you can sample now. I also found that there are four other Chook and Sosig games which are short, fun and "choose your own price" so it seems like a good time to connect you to them.

I'd recommend playing these games in order. The first is actually more of a quirky, visual novel with multiple, sequential endings. We meet Sosig, a former kitten star, and some of the ghosts. It is surprising, delightful and very silly. The second, A Case of Murder, addresses the murder of Sosig's neighbour. It's still, largely, a series of beautifully presented conversations, but you investigate by finding objects at crime scenes and making some narrative choices. You're also introduced to Exley, who runs board game nights.

Interestingly, A Case of Murder is still unfinished, but the third title, Chook and Sosig: Hit the Club starts afresh and, this time, it's more of a point and click adventure game. You're on a quest to join Exley's gaming group. Everything unfolds in the one room pub, but there's a satisfying progression to conversation and logic. In a way I've come to expect, the fourth title then takes Chook and Sosig on holiday and is nothing to do with Exley's group at all, before returning to the point I was originally trying to make, regarding the fifth, upcoming game.

The "game within a game" concept works cleverly, for this dialogue-heavy kind of adventure. Indeed, it's as if the first few games practised mechanics and implementation, to arrive at Walk the Plank, which neatly combines them all. You solve puzzles in character, then view cutscenes of everyone playing at the table.

The Chook and Sosig series is mostly concerned with conversation and visual problem solving. It has that charming quality you'll find in many indie adventures and is suitable to play with kids. I started developing a genuine affection for the gang and it's nice when a game is simply about the healthy dynamic between good friends, rather than more challenging content. Card Hunter is another title that captured this in recent years. Due for release this year, Walk the Plank is for lovers of adventure games and easy friendships.



RELEASED

SYMPOSIUM OF GRIEF

DEVELOPER T-DOG EXTREME • CHOOSE YOUR OWN PRICE
https://t-dogextreme.itch.io/symposium-of-grief

I've often thought that 1920s jazz sounds sad to the contemporary, Western ear, even though it probably shouldn't. Wailing clarinets, muddy brass, "vibrato you could drive a truck through," as my old music teacher would say. It almost comes across as overly emotional, but in a way that we that might not connect with modern feels. It's the perfect soundtrack to a broken heart, being distant and melodramatic. Designer, T-Dog eXtreme, told me that sourcing copyright-free music from a bygone era influenced Symposium of Grief significantly.

This adventure-of-sorts looks much like a very old, very exhausted, film. Almost vaudevillian, animated, cartoon characters sell condoms, hotdogs and donuts to the undead. The sweet shop is next to the dentist. The game is silent (in that you read text) and almost black and white. The only colours you'll see are to depict various types of hearts; broken, whole, "growing in wrong" and so on. Everyone has a visible heart, and it may feature in conversation, but it's not who a person is. It's just pinned onto their chest, for reference.

The protagonist is a ghost. Their "heart" (who actually IS a character as well as the broken mess pinned to their front) has left, yet (mysteriously) they've never collected their things and (somehow) a plasma TV has been (mistakenly) ordered to Ghost's house. Thus begins a series of feverishly connected fetch quests which are less about solving anything in particular and more about the raw pain that this situation has caused. You need a friend, or food, or pleasure, or religion, or to destroy things, or a cat.

Unlike an old film, there's a lot of swearing. In fact, when characters exchange multiple profanities, it's as if the elaborate pantomime falls away and you're briefly, truly at one with your new, inescapable reality. One of the shops even has two swear words on its sign because why not? When I was teaching in a High School, we used to say, "You can express yourself without swearing," but this game certainly communicates agony effectively this way. I wanted to give my whole computer a hug. I envy anyone who can't relate to this story.

Mechanically, there are some clever moments. I won't spoil my favourite puzzle, but I understood what the game was asking me to do immediately, even though I can't recall coming across this idea in an adventure game before. The "boss fight" at the end (which is comprised of neither a boss, nor fighting) is basically how your grandmother would help you if you told her you were in pain over a breakup. It took me more than an hour to complete and that was the only hour that I didn't feel any strong emotions. That's not an accident.

If it sounds like Symposium of Grief is a harrowing experience, it's not. It's actually very funny. Why won't the sphinx give you their vacuum cleaner? Leverage; they know you need it and can get you to fetch an item for them. Some of my favourite moments were talking with the therapist or priest, where the best of their advice became unintelligible. Ghost wasn't listening. I wasn't listening. Who wants advice when your heart won't even take their boxes of [insert swears here] with them? Get a donut and this game. You won't regret it. PC

THE GAMES OF E3 2019

E3 2019 is over, and it's been a busy one. Here's a roundup of what's coming to your PC soon!

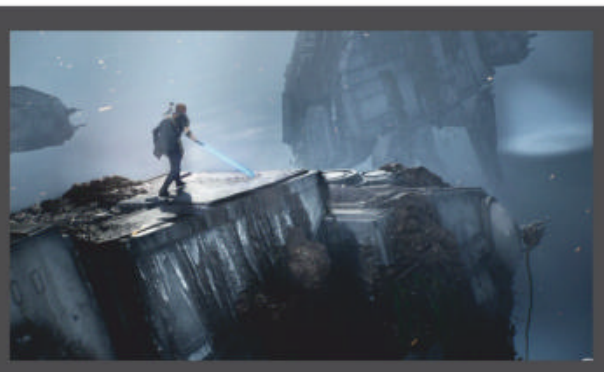
By Christian Guyton

There's a lot of sequels coming out of E3 this year, which is no bad thing. Many have been a long time coming, and we've seen a few original IPs cropping up, too. More and more are going multiplatform, as well, bringing great experiences to PC that might have been confined by console exclusivity in years gone by. The big names have all been throwing their weight around: While Sony may have been absent, Microsoft was keen to announce several games alongside its Xbox Scarlett project; Bethesda had plenty of hotly anticipated sequels to show off; and Ubisoft is keen to keep Tom Clancy revolving in his grave. So, read on, and check out our 30 most anticipated games from E3 2019.

VAMPIRE: THE MASQUERADE BLOODLINES 2

DEVELOPER THARDSUIT LABS **PUBLISHER** PARADOX INTERACTIVE
ETA MARCH 2020

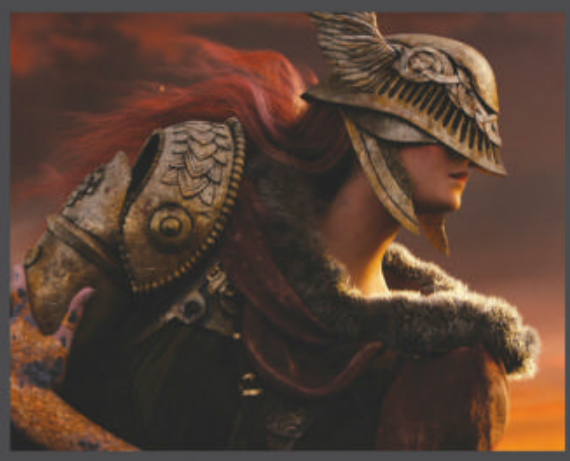
Long-awaited doesn't begin to describe it. A favorite of know-it-all RPG nerds (yes, including us), the Vampire: The Masquerade series holds major kudos among gamers in the know. This sequel looks to scratch the vampiric role-playing itch, with a detailed world and numerous gameplay styles.



JEDI: FALLEN ORDER

DEVELOPER RESPAWN ENTERTAINMENT **PUBLISHER** ELECTRONIC ARTS
ETA NOVEMBER 2019

Respawn is enjoying no small degree of success right now, thanks to the breakout popularity of its free-to-play battle royale Apex Legends. The developer's next major project is set in a galaxy far, far away—a lone Jedi striking out to fight the Empire with all manner of Force and lightsaber-related antics.



ELDEN RING

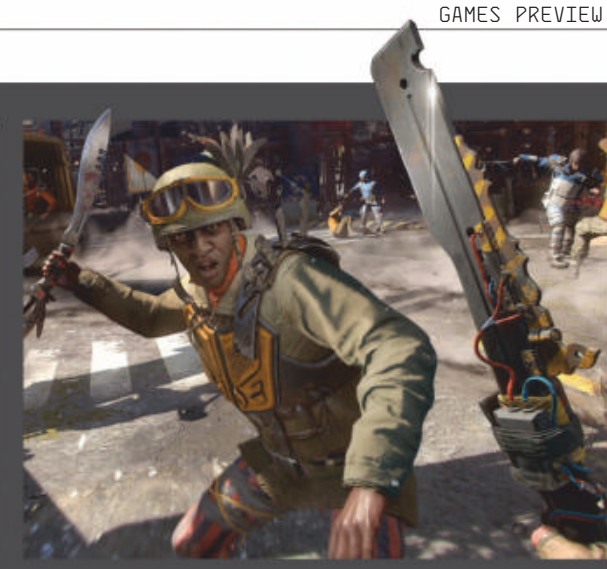
DEVELOPER FROMSOFTWARE **PUBLISHER** BANDAI NAMCO
ETA TBC 2020

FromSoftware and George R.R. Martin? It's safe to assume that we'll be doing some (read: a lot of) dying in this game. Creator Hidetaka Miyazaki has confirmed that it'll be From's biggest game ever. No mention of whether everyone's favorite Mother of Dragons will cameo, though.

BLAIR WITCH

DEVELOPER BLOOBER TEAM **PUBLISHER** LIONSGATE GAMES
ETA AUGUST 2019

Truly good horror games can be few and far between, so we're hoping that this one will scare the pants off us. It looks like it's checking all the boxes, too. Spooky teleporting monsters? Yup. A haunted forest? Check. Protagonist with a trusty old-school video camera? You got it.



DYING LIGHT 2

DEVELOPER TECHLAND **PUBLISHER** SQUARE ENIX
ETA TBC 2020

The first Dying Light was a surprise success, a fast-paced combo of parkour and melee combat in a zombie-infested city. This looks darker, with protagonist Aiden in the process of succumbing to the undead virus, but it still has the same amount of zombie defenestration.

CYBERPUNK 2077

DEVELOPER CD PROJEKT RED
PUBLISHER CD PROJEKT
ETA APRIL 2020

Of course CD Projekt Red's latest and greatest is on this list. E3 saw a new CGI trailer and – shock – an actual release date for the Polish developer's upcoming gritty sci-fi romp. Get ready to stab some guys with your nifty arm-blades on April 16, 2020. Now with more Keanu Reeves!

STARMANCER

DEVELOPER OMINUX GAMES **PUBLISHER** CHUCKLEFISH **ETA** TBC

It's Dwarf Fortress, but in space. We don't know exactly how closely it resembles the resource-management classic, but it hands the player the responsibility of running a space colony under threat from natural hazards and marauding bandits. It looks great, too – intricately detailed pixel art bringing your little colony to life.

MINECRAFT DUNGEONS

DEVELOPER MOJANG **PUBLISHER** MICROSOFT STUDIOS **ETA** SPRING 2020

Honestly, this looks good as hell. A four-player co-op dungeon crawler in the vein of Diablo, but with the cutesy, cubic art style of Minecraft? We didn't see this one coming, but after watching it in action, we're pleasantly surprised; it's bringing a genuinely fun and unique twist to the dungeon-crawling genre.

TOM CLANCY'S RAINBOW SIX: QUARANTINE

DEVELOPER UBISOFT **PUBLISHER** UBISOFT
ETA TBC 2020

This is an odd one. Based on the popular Rainbow Six: Siege event, Outbreak, this sees elite operators facing off against an alien contagion that turns people into spiky, murderous monsters. It's an unusual twist for the series, but has potential to be lots of fun.

BLEEDING EDGE

DEVELOPER BLEEDING EDGE **PUBLISHER** XBOX GAME STUDIOS **ETA** TBC

What is Bleeding Edge? Well, we're hoping it's going to be Anarchy Reigns, but actually good this time around. A 4v4 melee brawler with a cast of absurd and colorful characters, it's brought to you by Ninja Theory, who has demonstrated some pretty serious melee combat chops in the past.

ROLLER CHAMPIONS

DEVELOPER UBISOFT
PUBLISHER UBISOFT **ETA** TBC

A wild take on roller derby with clear Rocket League influences, Roller Champions is a bonkers technicolor future sports game featuring cartoonish characters on roller skates. There's a lot of noise, glowing orbs being chucked about, and screaming stadium commentators. With multiple game modes, we hope for some heavy competitive streaming potential.

MICROSOFT FLIGHT SIMULATOR

DEVELOPER MICROSOFT GAME STUDIOS **PUBLISHER** MICROSOFT
ETA TBC 2020

Why are we so excited about this? Well, a satellite-mapped real-world environment rendered in glorious 4K is a great starting point. The trailer showcased locations ranging from New York City to Egypt, with beautiful weather effects, and a range of aircraft to pilot.

WOLFENSTEIN: YOUNGBLOOD

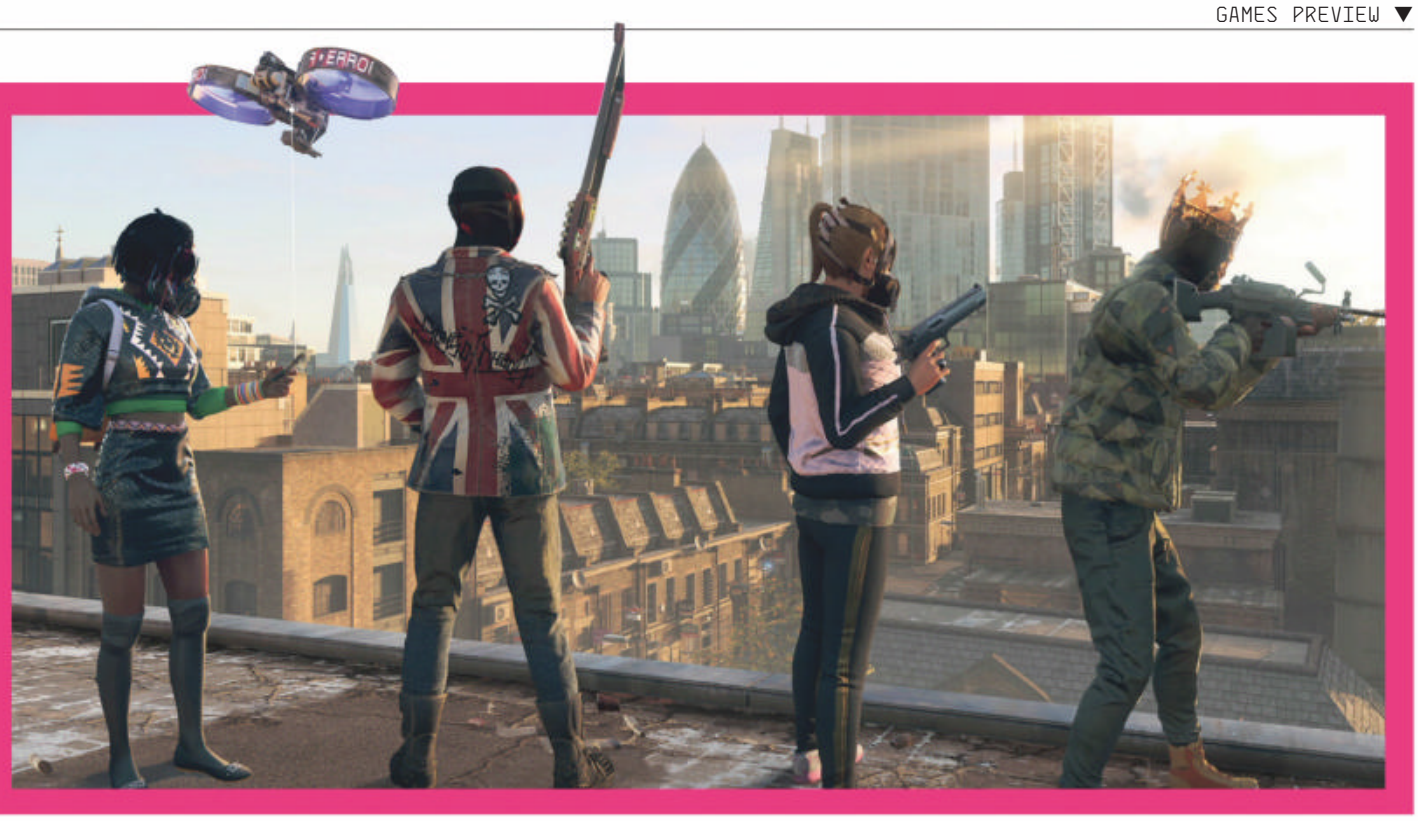
DEVELOPER MACHINEGAMES **PUBLISHER** BETHESDA SOFTWORKS **ETA** JULY 2019

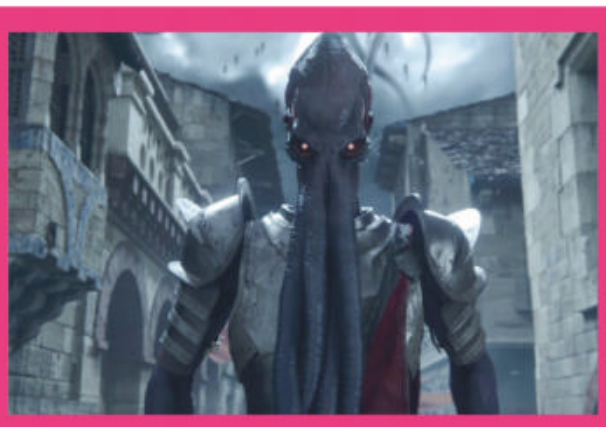
A game that should be out by the time you're reading this, Bethesda's latest Nazi-exploding shooter sees hero BJ Blazkowicz taking a short break while his twin daughters (who look nothing alike, strangely) wreck the Fourth Reich in high-octane action against a backdrop of 80s France. Two protagonists make for co-op gameplay, too!

WATCH DOGS LEGION

DEVELOPER UBISOFT **PUBLISHER** UBISOFT
ETA MARCH 2020

Despite a beleaguered past, the Watch Dogs franchise is still kicking, showing off an impressive E3 gameplay demo. Set in a dystopian near-future London, Legion sees players able to take control of any random character wandering the overworld, an ability that will prove necessary due to the game's permadeath mechanic.





BALDUR'S GATE 3

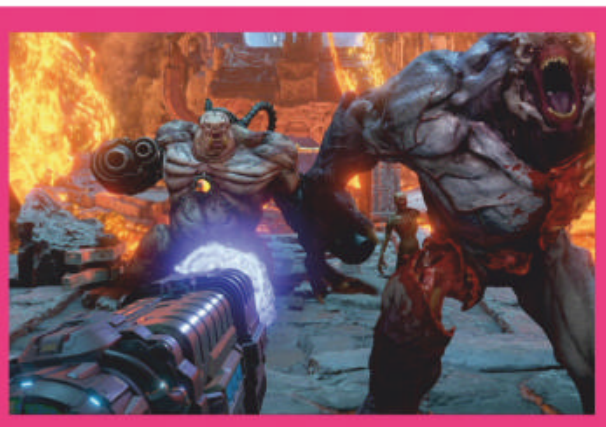
DEVELOPER LARIAN STUDIOS **PUBLISHER** LARIAN STUDIOS **ETA** TBC

It's been almost two decades since a new Baldur's Gate game – no, the 2013 remaster doesn't count – so, needless to say, we're fairly hyped about this. The third installment is bringing some seriously Lovecraftian styles into play, with a (gross) CGI trailer that shows a soldier transformed into a tentacled Cthulian beast (it's an Ithillid - ed).

LAST OASIS

DEVELOPER DONKEY CREW **PUBLISHER** DONKEY CREW **ETA** SEPTEMBER 2019

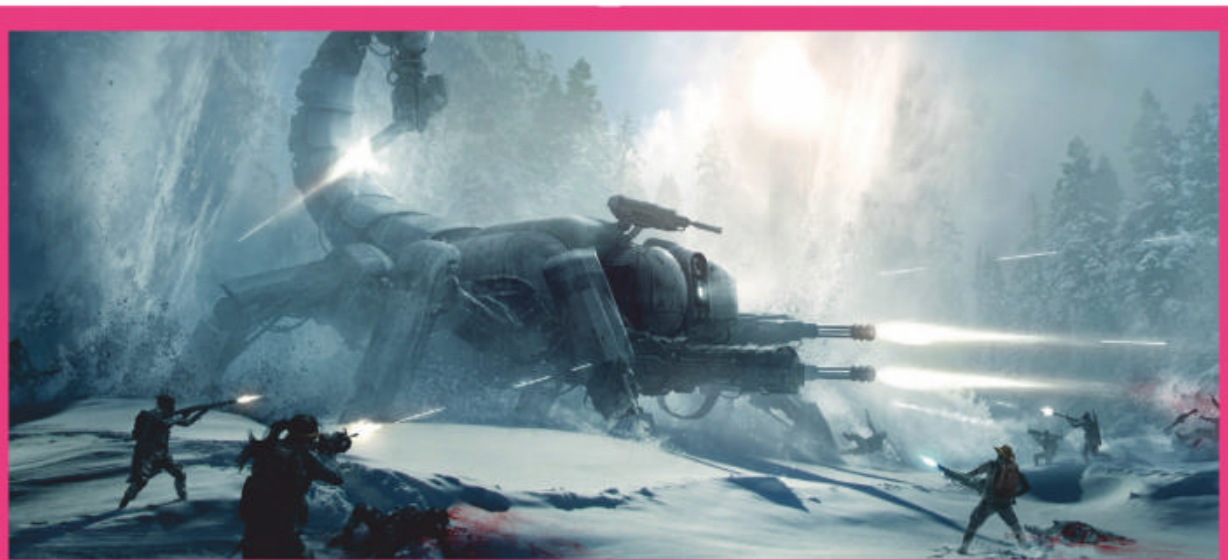
Indie dev team Donkey Crew is working on something that looks genuinely original. Set in a sprawling open world of deserts and woodlands, Last Oasis tasks players with constructing giant many-legged woodpunk platforms called Walkers. It's multiplayer, forcing players to choose whether to help or hinder the scavenging efforts of fellow survivors.



DOOM ETERNAL

DEVELOPER ID SOFTWARE **PUBLISHER** BETHESDA SOFTWORKS
ETA NOVEMBER 2019

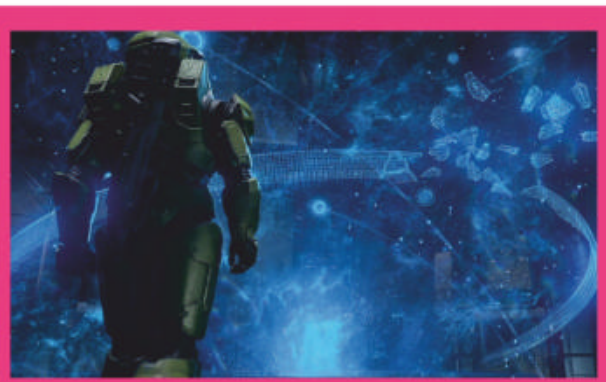
Look: It's Doom! The world has really gone to the dogs, so it's up to you to don that iconic green armor and slaughter hordes of demons to a shredding soundtrack. Bethesda also showed an asymmetric multiplayer mode, which sees players commanding either the Doom Slayer himself or a pair of powerful demons.



WASTELAND 3

DEVELOPER INXILE ENTERTAINMENT **PUBLISHER** INXILE ENTERTAINMENT **ETA** TBC 2020

The Wasteland series has quite a rich heritage, often cited as a cult favorite of turn-based RPG aficionados. This new game is injecting a little more excitement into the post-apocalyptic setting, with wintery environments and hulking spider tanks. And, uh, clowns? Not quite sure what's going on with that…



HALO INFINITE

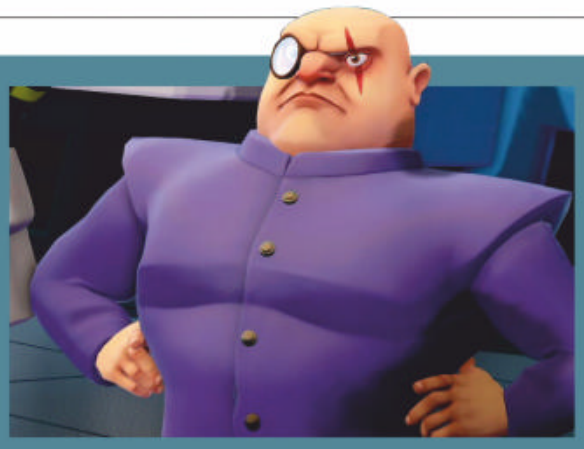
DEVELOPER 343 INDUSTRIES **PUBLISHER** XBOX GAME STUDIOS
ETA HOLIDAY 2020

Microsoft and 343 are going all-in on this one. Built in a brand-new engine, and treated as a "spiritual" reboot of Master Chief's story, Halo Infinite will be released on PC alongside its Xbox launch in 2020. The trailer sees Chief drifting in space; presumably, he'll transition to shooting aliens quickly enough.

DEATHLOOP

DEVELOPER ARKANE STUDIOS
PUBLISHER BETHESDA SOFTWORKS
ETA TBC 2020

An original game from famed Dishonored developer Arkane, Deathloop appears to feature two heroes facing off against each other on a time-looped island. No gameplay as of yet, but the animated trailer featured speedy gunplay and high-tech combat gadgets, with stylised direction reminiscent of cheesy grindhouse action movies.



EVIL GENIUS 2: WORLD DOMINATION

DEVELOPER REBELLION **PUBLISHER** REBELLION **ETA** TBC

As the name implies, Rebellion's new game casts you as a Bond-villain-esque evil genius, on a mission to dominate the world, and generally commit crimes from your lair, all with the help of loyal (if bumbling) henchmen. Defending your base from do-gooder spies plays a key role.

THE OUTER WORLDS

DEVELOPER OBSIDIAN ENTERTAINMENT
PUBLISHER PRIVATE DIVISION
ETA OCTOBER 2019

New gameplay footage from Obsidian Entertainment's new spacefaring RPG left us intrigued to see more; a bombastic, brightly colored blend of Fallout and Bioshock set on the far reaches of colonised space in the distant future. Expect a wide array of perks and weapons, and some deep dialogue options.

CHIVALRY 2

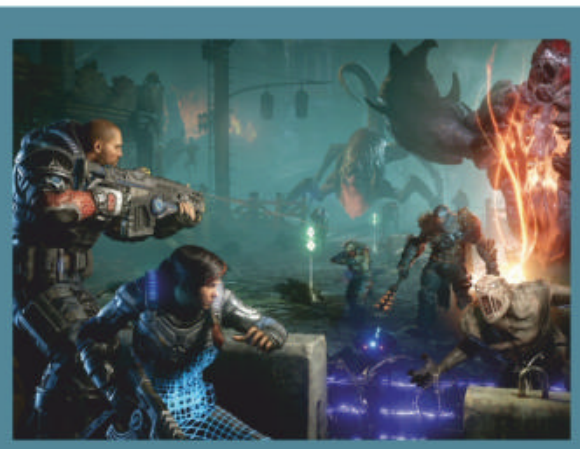
DEVELOPER TORN BANNER STUDIOS **PUBLISHER** ACTIVISION
ETA TBC 2020

Chivalry 2 is aiming to do what the original Chivalry did – silly multiplayer medieval sword fights – on a larger scale. We're talking 64-player battles, mounts, and greater depth of customisation. The developers have expressed an interest in recreating great fictional battles, too, such as Game of Thrones' legendary Battle of the Bastards.

PHANTASY STAR ONLINE 2

DEVELOPER ONLINE R&D **PUBLISHER** SEGA **ETA** TBC 2020

We'd forgive you for not having heard of this one. The original Phantasy Star Online was published by Sega way back in 2000, and the sequel actually released in Japan in 2012. Localisation clearly took a while. But it's here now, coming to PC in the West next year with a new free-to-play model.



GEARS 5

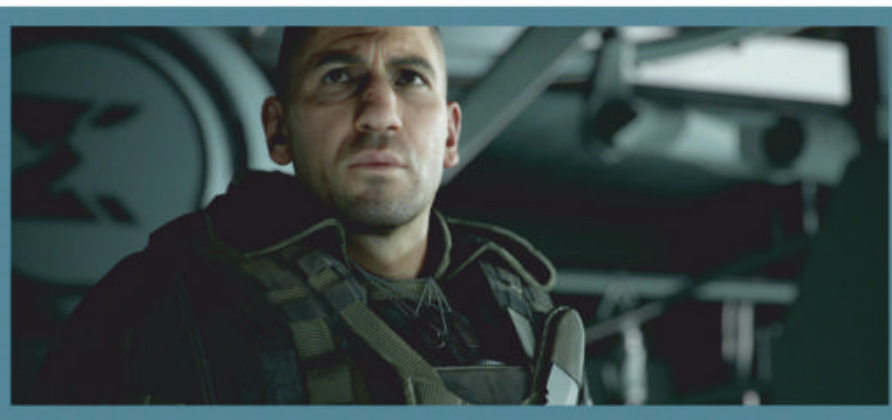
DEVELOPER THE COALITION **PUBLISHER** XBOX GAME STUDIOS **ETA** SEPTEMBER 2019

Included in the coming-soon-to-PC Xbox Game Pass service, the newest Gears of War game (or just Gears now, apparently) comes packing a new story mixing old and new characters, and a variety of game modes for co-operation-minded players. And yes, they still have guns with chainsaws on them.

BORDERLANDS 3

DEVELOPER GEARBOX SOFTWARE
PUBLISHER 2K GAMES **ETA** SEPTEMBER 2019

The daddy of looter-shooters is back, and bigger than ever. The most recent teasers have shown us homing grenades, a pilotable mech, and guns with tiny legs, so it's all par for the course in Gearbox's ridiculous, over-the-top universe. Most interestingly, the numerous guns will have new alt-fire modes, too.



TOM CLANCY'S GHOST RECON BREAKPOINT

DEVELOPER UBISOFT **PUBLISHER** UBISOFT **ETA** OCTOBER 2019

The E3 presentation for this featured Jon Bernthal (Netflix's Punisher, for those not in the loop) on stage with his dog. He's in the game; the dog isn't. Expect the usual stealthy shooter antics, with burly men who are unexpectedly good at hide-and-seek.

GODS & MONSTERS

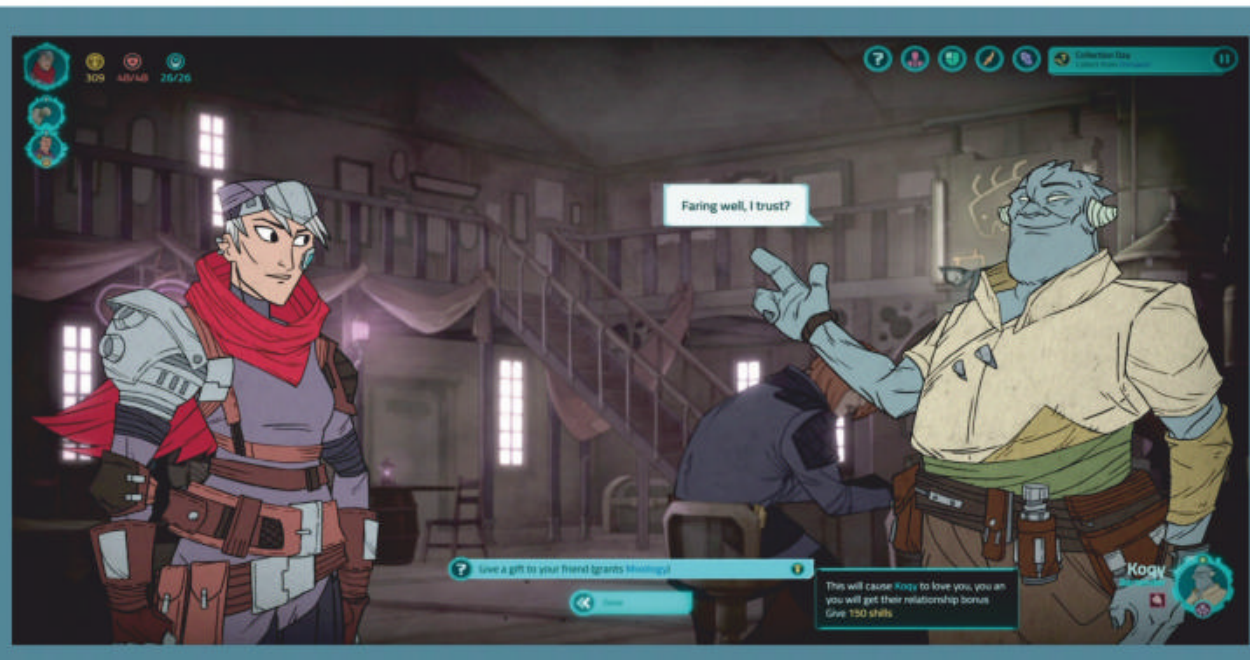
DEVELOPER UBISOFT **PUBLISHER** UBISOFT **ETA** FEBRUARY 2020

We've only been shown a brief teaser trailer of this, but it comes from the team behind the excellent Assassin's Creed: Odyssey, and appears to focus on hunting mythological beasts. The art style is bright and youthful, indicating that this may be aimed at a slightly younger audience than Odyssey.

CALL OF DUTY: MODERN WARFARE

DEVELOPER INFINITY WARD **PUBLISHER** ACTIVISION **ETA** OCTOBER 2019

Is it a reboot? A remake? We're not sure, but CoD's latest promises to be a darker, grittier take on the military shooter series. Captain Price is back, and it looks like Infinity Ward is keen to return to the series's action-packed campaign roots.



GRIFTLANDS

DEVELOPER KLEI ENTERTAINMENT **PUBLISHER** KLEI ENTERTAINMENT **ETA** TBC 2019

Klei Entertainment's new IP appeared to be in dire straits for a while, with the original trailer being pulled from the Steam store, and the release date thrown into oblivion. But it's back, promising card-based adventuring gameplay within a rogue-like framework, set in a gritty sci-fi frontier world. The alpha is coming soon.

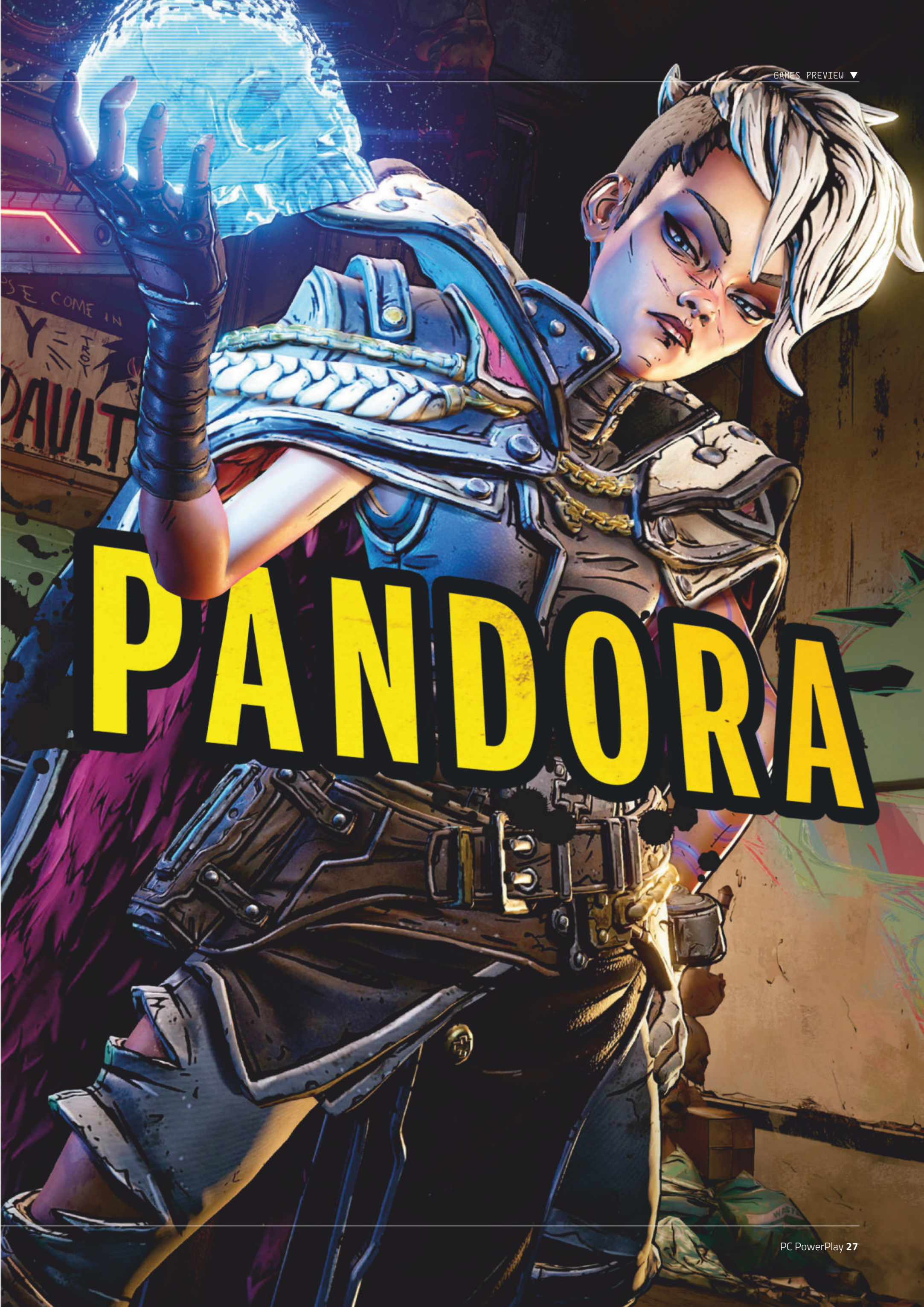
BEYOND

BORDERLANDS 3 takes to the stars. Is this a bold new direction for the series?

PHIL SAVAGE

I'm in LA, in a 'secret location' – it's a warehouse – to experience the grand unveiling of Borderlands 3. It's early in the day, and I'm still slightly jetlagged. On stage, projected onto a giant screen, Claptrap is doing a dance. His shrieks echo throughout the building. Having established that the series' mascot is back, and – depending on your perspective – as funny or as too-irritating-for-this-time-of-the-morning as usual, the demo continues. There's banter, there's wasteland combat, and there's a miniboss. "Shiv," introduces the title card. "Brought a knife to a gun fight." Borderlands is back.

I'm initially underwhelmed. The early demo introduces some new movement options – sliding and mantling – but nothing that feels like a bold new direction for the series. An iterative sequel is all fine and well, but I've been fighting through Borderlands' wastelands for tens – maybe hundreds – of hours. Is more of the same really enough?


PANDORA

RIGHT: Bandits are as varied and wacky as ever.

MAIN: Enjoy irony? Kill Maliwan troops with their own guns.

Then, about 40 minutes into the demo, it happens. The demo skips ahead and we're introduced to Sanctuary III. It's Borderlands 3's new hub – a safe zone where players can chat with NPCs, shop, pick up quests and test weapons. It's also a spaceship. From the bridge, we can see the place that has defined the series up to this point: the planet of Pandora and its moon, Elpis. And then we leave, warping out of the system and arriving somewhere new.

"I think that the desire to leave Pandora has been around for a long time," says Carl Shedd, lead lighting artist. "It's funny, it's a neat split. You have purists who are like, 'I know it was desert, but it felt like home'. I played the Game of the Year edition recently, and it felt so familiar to be back home. But the narrative and design teams wanted to experience what it would mean to be planet hopping. And the first time that I saw the warp, I had that, 'Holy shit, this is kinda cool' moment. And I've gotta be honest, when I saw Pandora out the window, it felt really nostalgic."

Sanctuary III arrives at Promethea, one of a number of planets that will be available in the full game. If Pandora was a murderous backwater, the region of Promethea shown is a murderous sci-fi city, bathed in cool purples at night, and giving way to a rich orange as the sun rises. An asteroid belt orbits the planet, causing frequent eclipses as the space rocks move past. "That was something that came from Randy [Pitchford, CEO of Gearbox]," explains Shedd. "He said, 'Man, this is infinite space. We don't have to have a sun, we don't have to have a moon. Think of crazy shit. Have some fun'."

CROSSING BORDERS

Despite the "crazy shit" mandate, Gearbox still wants Borderlands 3 to maintain the series' style and aesthetic. "The challenge came from finding ways to introduce players to unique environments without alienating the feel of the wasteland," says Shepp. "I feel like there was a lot of trepidation from everybody in the art team. We'd have a concept for this planet and that planet, and we'd look at those and go, 'That's really pretty but it just doesn't feel like it belongs in Borderlands'. So I think the challenge was trying to invent environments that felt new and felt fresh, but we all felt that yes, this is a natural place that would exist along with the humour and gameplay. I'm happy with where we've landed."

INTO NEW LANDS

After the presentation, I get to play a section of the game – starting just after the Vault Hunter arrives on Promethea. The reason for Borderlands 3's planet-hopping journey is to find new Vaults – ancient locations full of advanced weapons (or, sometimes, just big prisons containing a giant tentacle monster). Racing you to their location is the Children of the Vault, a new cult headed up by Tyreen and Troy Calypso. On Promethea, they've inserted themselves into a war between weapons manufacturers Atlas – now headed by Tales from the Borderlands' Rhys – and Maliwan, allying with the latter. Working with Atlas, my job is to secure the city.

On stage, Pitchford describes the Calypso twins as "like the douchiest kind of live streamers of the future you can possibly imagine". I get a sense of that when they call to taunt me during a mission. "Superfan," Tyreen enthuses. "So, what do you think of our first corporate sponsors? I gotta say, so far selling out rules."

"We knew we wanted to have these twins, right from the get go," says Paul Sage, creative director. "And then, a little later on, we said, 'OK, we're going to double down on this cult idea'. But internally, we were like, 'I don't know, man, it's just still not hitting'. It wasn't until we hit on this thing where they became unlikable streamers that we were like, 'Oh, that's actually what's making this magic again'. That's what's really bringing them forward into people's minds. It's kind of that punch-in-the-face factor. They're not just evil for evil's sake. They're just people I really don't like that are horrible."

In helping Rhys, I get plenty of opportunity to tangle with Maliwan's army, as well as the bandits following the Children of the Vault. And I have to say, that slide manoeuvre that felt so underwhelming at first? It's a game changer. I've always enjoyed the Borderlands series because of its tone, style and ridiculous loot, but pure combat has always felt simply functional. My time with Borderlands 3, though, suggests that it will be a legitimately great shooter. Movement is more fluid and dynamic, and the guns – which are more varied and absurd – feel better than ever. "We've been trying to push the envelope as far as that's concerned in every sort of facet," says Kevin Powell, systems designer. "And so yeah, better guns, systems feel better, and we have a lot of quality of life changes with the sliding and mantling."

Beyond the pure feel of the gunplay, more work has been put into creating exciting combat arenas. "We definitely want players to interact with the environment a little more," says Powell. "And so you notice if you shot a pipe, there was some oil that came out, and if you shot an explosive barrel or had a fire elemental weapon, you can light that puddle on fire. Various elemental things can interact with things in the world in different ways, and so we really wanted to push that concept … There's a lot of destructibility throughout the game. Of course, we have ridiculous weapons that explode everywhere so it's cool to kind of see things fly everywhere and stuff like that."

The main attraction, though, is still the guns, and the procedural generation system that ensures no two players will be wielding the same arsenal. Guns are an important part of the Borderlands universe, to the point that each different manufacturer, as well as being an entity within the story, also has its own design philosophy and weapon parts. "Our gun team has done an amazing job of pushing that concept of these are the guns and they do ridiculous crazy shit," says Powell. "I believe in the previous Borderlands there were around 300 or so weapon parts, and then in this one we have over a thousand. If you can imagine, there's a lot more variation that can happen when you generate those weapons."

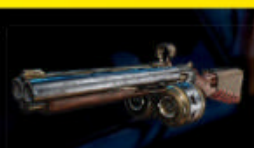
"We have a fully formed weapons team this time, that includes concept guys, content art guys, game designers," explains Shapp. "And they've been incredibly efficient, they've always been ahead of everyone on schedule. So they'll show up to our review meetings and they'll always have the best stuff. It's kind of a nice shot in the arm, to be reminded what this is all about. Those guys have put in a lot of time and effort and heart into trying to really expand those manufacturer differences. They really put effort into making sure they weren't intermixing parts between manufacturers. They were like, 'This is Tediore, and this is Tediore's parts. This is Malawan, and this is Malawan parts'. I think for us, we're getting closer and closer with every evolution to where our imaginations thought we were ten years ago."

In the demo, despite earning a unique

"WE HAVE A FULLY FORMED WEAPONS TEAM THIS TIME"

GUN GAME

The titans of weapon design



JAKOBS
Western-inspired guns with ricocheting bullets that do critical hits.

ATLAS
Can alternate fire tracker darts that let smart bullets home in on targets.

VLADOF
Offers a high rate of fire, terrible accuracy and explosive options.

MALIWAN
Masters of elemental damage. Lets you toggle two elements.

DAHL
Built for accuracy, Dahl guns let you toggle different firing modes.

HYPERION
Is more accurate the longer you fire. Has a shield when you aim down sights.

COV
Guns cobbled together by the cultists of the Children of Vault.

TORGUE
Alternate fire modes offer sticky projectiles that stack damage.

TEDIORE
Don't reload, throw it away and watch as it sprouts legs and shoots stuff.

"WHEN YOU WANT TO PLAY WITH PEOPLE, YOU WANT TO GET IN QUICK TO THE ACTION"

» boss weapon that inflicted ridiculous acid damage, my go-to gun ends up being one of these random, procedural drops. It's a Tediore shotgun that has high range and low bullet spread, making it a beast at turning heads into a gruesome splatter of gibs. Tediore's deal is manufacturing weapons so cheap that, rather than reloading, you just throw it away and have a new one digistruct into your hands. In this case, my shotgun just exploded on impact, but there are other, stranger options. Some Tediore guns will bounce around the room. Others will sprout legs, and walk away, looking for enemies to shoot. Further augmenting the arsenal, some weapons will have secondary fire modes. In the presentation, we see one gun that shoots a tracking dart that, when it hits an enemy, causes bullets to home in on their target.

The 'loot shooter' has become a more competitive genre since the release of Borderlands 2, with Destiny 2, The

THE NEW CLASS

Introducing Borderlands *3's Vault Hunters*

MOZE
Class: Gunner
Can digistruct a mech around herself. Other players can use the mounted gun on its head.

AMARA
Class: Siren
Summons ethereal fists that can slam, blast and grab enemies, inflicting elemental damage.

FL4K
Class: Beastmaster
Pets! FL4K can command skags, spiderants and other beasties found in the *Borderlands* universe.

ZANE
Class: Operative
AKA, the one with the drone. As an Operative, Zane can equip two abilities at the same time.

RIGHT: Promethea is experiencing a hostile corporate takeover.

MAIN: Zane is one of the four Vault Hunters. And Irish.

Division 2 and Anthem all currently vying for players' attention. Gearbox, however, isn't tempted by the games-as-a-service trend. Nonetheless, co-op remains an important focus for the sequel. "I come from an MMO background," says Sage, "and so one of the things that I've learned over time is, when you want to play with people, you want to get in quick to the action. I think that is one of the beautiful things about Borderlands 2 and Borderlands 3, the ability to just match and say, 'Hey, I want to go fight bosses, or I want to go have this game plan activity' … You're just in there having a good time."

To this end, Borderlands 3 will introduce some infrastructural tweaks to make getting together with friends that much easier. Now, when players group together, the enemies they fight and the gear they collect will be appropriately scaled for each teammate. Gearbox demonstrated the system during the presentation, as a second, higher level player joined the fight. A low level enemy for the first player appeared as a higher level one for their partner. And when the fight is over, Gearbox protects players from teammates with poor impulse control with a new feature that will instance loot to each player, meaning there's no longer a need to squabble over who needs that legendary drop.

In fact, many of the new or tweaked conveniences seem specifically designed to keep groups moving at pace. A new station on Sanctuary III, for instance, will collect up any guns you don't pick up during play – presumably meaning groups won't need to spend a long period of downtime painstakingly sorting through a boss's drops. Even character skills have been adjusted to fit this mentality. Each Vault Hunter still has three skill trees to pick from, but now each tree features its own active ability that you can swap in and out. Amara, for instance, has a ground pound called Phaseslam, a projectile attack called Phaseblast, and Phasegrap, which holds an enemy in place (similar to Maya's Phaselock in Borderlands 2). Zane, meanwhile, has an automated drone, a clone that he can swap places with, and a barrier that stops incoming attacks.

What this means is that each character has the potential to fill multiple roles and playstyles, ensuring that even two players who are using the same character can team up and fill a meaningfully different niche.

BIGGER AND BETTER

The one main question I had during the event was this: to what extent do these different planets change the way a Borderlands game plays? Based on my time on Promethea, the answer is not very much at all. "Same Borderlands formula, but not on Pandora only," as Powell succinctly explains. But my time playing Borderlands 3 only served to reaffirm what I already enjoyed about the series, and had me impressed by the clever tweaks and additions implemented along the way – from better combat and a co-op friendly infrastructure, to, yes, sliding and mantling.

Gearbox doesn't need to ape the live service loot shooters that have emerged in the seven years since Borderlands 2's release. Rather, they can cherry pick some of their main quality of life innovations, and feed them back into a series that already has its own personality and following. Borderlands 3 will be bigger. It has the potential to be much better. And it's in space. Beyond that, I think more of the same really will be enough. ■

CRYSTAL

V'S A CROWD

How choice, freedom and Keanu Reeves make **CYBERPUNK 2077** the most exciting game of E3.

Feature by Phil Savage, boxouts by Andy Kelly

In the new CGI trailer for Cyberpunk 2077, unveiled at Microsoft's Xbox E3 Briefing, main character V is having a bad day. His partner, Jackie Welles, is dead. His fixer, Dexter DeShawn, has betrayed him. When he regains consciousness, he's lying in a garbage dump. "Wake the fuck up samurai," says a voice. "We have a city to burn." The source of that voice? It's Keanu Reeves.

Cue rapturous applause as Reeves appears on stage to talk about his appearance in CD Projekt Red's next RPG. It was an exciting surprise in an industry event that rarely keeps a secret for long.

But who is Reeves' character, and why is he so interested in V?

"Keanu Reeves in our game plays the role of Johnny Silverhand," says Paweł Sasko, lead quest designer for Cyberpunk 2077. "Johnny Silverhand is the frontman of Samurai, a chrome rock band from 2020, from the original [pen-and-paper RPG] book. Now, Johnny Silverhand is a primary character in our game, and the player, V, has him on a chip in his head as this digital ghost."

Johnny will be a presence throughout the game, although it's not clear what his motivation is for helping V. "The thing is that Johnny Silverhand has his own agenda," says Sasko. "He used to be a fighter for freedom, but in the eyes of corporations he would probably be called a terrorist." Sasko characterises Silverhand as someone with a strong vision of how the world should work, "He's a true cyberpunk. He's the guy who goes against the system, against the corporations, and against the city that's just an embodiment of this."

Which brings us back to his line in the trailer. Silverhand clearly wants something, and is trying to influence V to help achieve that goal. "It starts this interesting dynamic between them," says Sasko. "And he has his own role that develops throughout the game. 'We have a city to burn'. He means something very specific by that."

The damaged biochip implanted in V's head does more than just allow him (or her) to commune with a digital ghost. It also supposedly contains the secret to immortality. This is one of the driving plot points of the brand new behind-closed-doors E3 demo – a 50 minute developer playthrough of a never before seen chunk of the game.

To find out more about the chip, V travels to Pacifica. Planned as Night City's luxury tourist destination, the district sits decrepit and impoverished after the corporations pulled their support. It's now the home of the Voodoo Boys, an insular, secretive gang obsessed with cyberspace. V wants to meet their leader, Brigitte, in the hope that she can reveal more about the biochip.

The demo starts as V walks up to a mirror – letting CD Projekt Red run through some of the character customisation options. As revealed last year, Cyberpunk 2077 doesn't have a defined main character. You can pick their gender, their appearance and even their origin story. "You start by picking your life path, so Nomad, Corporate or Street Kid," explains Sasko.

"That gives you some predefined number of things – your equipment and background and so on."

Your life path also affects how you interact with characters. Some dialogue choices are locked to a specific life path. Others are locked behind skill proficiency, meaning a character adept at hacking will have different choices to one who's very good at punching. "That helps out because it opens a new branch in the story. Sometimes it's a small thing. Fairly often it's something bigger, because we always try to make sure there's enough meat that the players are rewarded for investing in it."

Customisation done, V steps away from the mirror. "Really think they give a rat's dick about how you look?" quips Silverhand.

ABOVE: V rides his bike into Pacifica, a district of Night City filled with gang-ravaged slums.

BOTTOM LEFT: Despite the name, by day Night City is much brighter and sunnier than most videogame dystopias.

URBAN SPRAWL

Later in the demo, V meets up with a Voodoo Boys contact, Placide. He leads V through the streets of Pacifica towards the gang's HQ. The district itself feels different to the dense urban skyscrapers showcased in last year's demo. You can see the rough shape of its original purpose – a suggestion of vibrancy that never truly materialised.

We also get a sense of the day-to-day lives of its current inhabitants, thanks to an upgrade to V's scanner that translates the Haitian Creole spoken by its residents in real-time.

Placide stops to point out a giant building in the distance. The Grand Imperial Mall, once envisioned as the main attraction of the district, is now a half-finished monument to corporate greed. It's recently been taken over by the Animals, a gang of juiced-up beefcakes who value strength above all else.

It seems like a quest is starting to form.

Sure enough, back at the Voodoo Boys HQ, Placide states that he'll only let V speak to Brigitte if he helps solve the Animal problem. After jacking into the Voodoo Boys' subnet – allowing Placide to watch V's every move – he explains that someone has been supplying the Animals with military-grade gear. V's job is to find out who's driving the van that's been making the deliveries.

Even this basic scene, which ultimately serves to give the player a new quest, is fraught with tension. Not only is Placide pushy and demanding, he's clearly hiding something, likely related to a commotion in a nearby room. The player has plenty of opportunity to call him on his bullshit, and to demand an explanation for what's really going on, but doing so might only serve to piss off the person we're reluctantly helping.

But maybe that's worth the risk. Sasko summarises Cyberpunk 2077's philosophy as 'freedom'. "If the player feels like they should be able to do something, they probably should. We are always doing our best to let you do it in our game. If a character pisses you off, there's probably an option to shoot him and all kinds of things like that."

Naturally that freedom extends to how you execute your missions. On reaching the Grand Imperial Mall, we see V attempt some stealth, sneaking past gang members before coming to a corridor guarded by a camera. As a Netrunner, this V can make use of a cyberdeck to hack into a nearby access point, gaining control over some of the buildings systems. Not only can V disable the camera, but, in the next room – a gym various members of the gang are working out in – he's able to turn the apparatus against them.

One of the Animals is in a boxing ring, sparring against a training bot. V tweaks the bot's difficulty setting until it punches the gang member to death. Around the corner, he hacks into a weightlifting bench so that it crushes the Animal working out on it. Upstairs, V hacks a vending machine, causing it to light up and distract a couple of guards. This seems tame in comparison to the previous shenanigans… right up until V pulls out his razor sharp nanowire and slices them to bits.

MIND CONTROL

Clearly Cyberpunk 2077 doesn't shy

WOAH

Keanu Reeves is a true cyberpunk

Keanu Reeves is no stranger to bleak sci-fi visions of the future. He was, of course, the star of The Matrix – the story of an office drone who learns that the world is a simulation created by machines. He also starred in Johnny Mnemonic (the film The Matrix could have been) as a data courier in a world dominated by megacorporations. And in the film adaptation of Philip K. Dick's A Scanner Darkly he played an undercover agent working for a government engaging in invasive high-tech surveillance of its citizens.

away from violence. In a later section, V uses the nanowire to hack into one of the Animals, gaining access to their internal network. Thanks to this, and a software daemon purchased and installed earlier in the demo, V is able to turn the guards against themselves, forcing one to remove the pin of their grenade, and another to shoot themselves in the head. It was, I have to say, a bit much.

Not every playthrough will be this grisly, however. "We have a completely nonlethal path throughout the whole game," says Sasko. Of course this is a dangerous, violent world, so you have to harm people sometimes. But you don't have to kill anybody. Any of the quests, street stories, open world content – you can go through the whole thing killing nobody."

To support this almost every weapon and cyberware installation will have a nonlethal mode. "The only exception is weapons that are lethal by definition," says Sasko. "So let's say you shoot someone in the face with a bazooka. You shoot his head off. That's typically lethal. There are weapons that are so lethal that it cannot go any other way. But everything else actually has a nonlethal option."

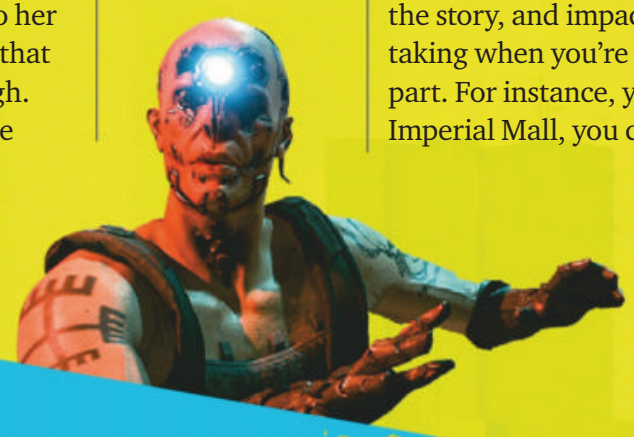
CDPR skips back and shows how the section would look with a completely different build. This V is a Solo. Unlike the Netrunner, she doesn't have access to a cyberdeck, meaning she can't hack the access point to disable the camera at the start of the level. Instead, she has plenty of combat skills and a pair of cyberarms. Thanks to her strength, she can pry open a door that the Netrunner couldn't get through.

After being spotted by one of the Animals, she dispatches her foes using throwing knives, broken bottles and, when all else fails, just her very lethal robo-arms. Where the Netrunner V hacked the turret guarding the van that he was sent to investigate, the Solo V just rips it out of its mounting and uses it to gun down everyone in sight.

ABOVE: Buying upgrades on the black market is the best way to stay at the top of the cyber foodchain.

"In The Witcher III we did focused, branching storylines in the open world," says Sasko. "In this game, we're actually adding to it with branching gameplay. And that also impacts the story.

"You can go through the quest and do the choices the same way you can do in The Witcher III, but that's the basic level for us. The character you are – your life path and your build – impacts the story, and impacts the paths you're taking when you're playing in a given part. For instance, you saw, in the Grand Imperial Mall, you could go through



ALTERNATE HISTORY

Key dates that shape **Cyberpunk's** *bleak future*

1989
A sinister organisation made up of high-ranking members of the CIA, NSC, FBI, and DEA secretly runs the United States behind the President's back.

1994
A nuclear meltdown occurs in Pittsburgh, PA. Almost 300 people die and cancer rates skyrocket. The exclusion zone around the reactor is named The Pitt.

1996
A catastrophic societal collapse begins. Martial law is established in the United States, the President is killed, and street gangs take control of the country.

2002
An event called the Food Crash occurs. Crops around the world are ravaged by a virus, but the United States defeats it by developing a counter-agent.

2004
The first Corporate War begins. Two megacorps, Euro Business Machines and Orbital Air, engage in a campaign of cyber-warfare after a deal falls through.

2017
The first self-aware human clone is created, NASA launches a manned mission to Mars, and London is flooded when terrorists bomb the Thames Barrier.

ABOVE LEFT: The detail in the chaotic, overcrowded Night City is remarkable.

LEFT: Keanu Reeves is Johnny Silverhand, frontman of 'chrome rock' band, Samurai.

BELOW: The problem with being part human, part machine is that people can hack you.

different barriers different ways. And when talking to characters, having different skills impacts what I can pick. So that even branches out. It's like natural evolution from the first Witcher branching story and open world. Now it's also branching gameplay."

What's most interesting to me about the different builds shown is that it's not an either/or situation. Classes are designed to be fluid – another example of CDPR's philosophy of freedom – meaning that if you want to play as a Solo that can use a cyberdeck and hack into access points, you can. The classes, skills, software and cyberware installations offer incredible scope for defining your preferred playstyle.

CHOOSE WISELY

Of course, your actions and dialogue choices will impact the outcome of quests and your relationships with the people you meet. Even your relationship with Silverhand will change based on your actions.

After reaching the van, however players ultimately choose to do it, V discovers that the person arming the Animals is an agent of NetWatch – a government agency looking to destroy the Voodoo Boys. The agent attempts to parlay, explaining that Placide is just using V to stop the agent's cyberattacks from taking out Brigitte and the gang – perhaps the reason for the commotion back at Voodoo HQ. Worse still, the agent suggests that Placide is planning to kill V after the job is done. There are a lot of ways this could go – including joining up with the agent. But, in the demo, V decides it's better the devil she knows.

She attempts to put a stop to the NetWatch attack, but is immediately double crossed by Placide. He uses his connection to V to shut down the attack himself – killing everyone connected to it in the process. But V doesn't actually die – possibly due to that chip. At Silverhand's suggestion she goes to confront Placide. Instead, she meets Brigitte. The final sequence of the demo sees Brigitte fulfil her end of the bargain, leading V into cyberspace and to the Black Wall that acts as a bridge to the deep net. Brigitte explains that nobody has returned from beyond the Black Wall, but that Alt Cunningham – Silverhand's ex-girlfriend, and the first Netrunner to become a fully digital entity – will be the first. The wall buckles from the other side as something violently crashes into it. And then the demo ends.

When I first saw Cyberpunk 2077 last year, it seemed beyond impressive, to the point that it felt like something that I wouldn't be playing for many, many years. This year, with this demo, it seems more achievable in its size and scope. Its RPG systems are familiar. Its immersive sim combat is easy to understand. It reminds me of Deus Ex, but with more choice, freedom and Keanu Reeves. That's an excellent thing to be. ■

"YOU CAN GO THROUGH THE WHOLE THING KILLING NOBODY"

Meet the hideous new face of Baldur's Gate.

The city is just one of the game's locations.

DEVELOPER LARIAN STUDIOS • **PUBLISHER** IN-HOUSE • **RELEASE** TBA
www.baldursgate3.game

Baldur's Gate III

Larian combines the best of Divinity with D&D 5th edition

Divinity:Original Sin 2 developer Larian Studios is working on its follow up to one of the best RPGs on PC – a third adventure with a new party of heroes. Just what you'd expect from Baldur's Gate III. Cue fainting elves and gasping halflings. Eighteen years after the Bhaalspawn saga came to a close, we're finally returning to the Forgotten Realms.

The world's moved forward quite a bit since the last games, so instead of picking up where its predecessors left things, Baldur's Gate III is a brand new adventure set in the Forgotten Realms as it is today, where Bhaal's unruly kids are history. Not to worry, though, as Larian's got another crisis to fling at the unfortunate city.

With over 20 years of D&D-adjacent RPGs behind it, from Divine Divinity to Divinity: Original Sin 2, Larian's hardly a wildcard choice, but when CEO Swen Vincke first approached Wizards of the Coast, he didn't get very far. Wizards called the studio "a bit too green" when Vincke tried to convince the publisher during the development of the first Original Sin. It was Wizards that got in touch with Larian, however, once Original Sin 2 was in the works.

"During Divinity: Original Sin 2, we had to submit the design for Baldur's Gate, which was annoying because we were about to release D:OS2," Vincke says. "So we sat in a hotel for a weekend the month before release, me and a couple of writers and designers, and we made the initial design document. It wasn't very good, but it had the core ideas and they did like it."

Larian made another version, Wizards loved it, and that became the foundation for Baldur's Gate III. Much of that foundation, unfortunately, remains a mystery. The first trailer is appropriately enigmatic until the end, with only a few hints that it's Baldur's Gate. A man with a flaming fist emblazoned on his tunic stumbles across cobbled streets, sweaty and distressed.

The trailer descends into gruesome body horror as he spits up teeth and violently transforms, evoking the appetite-ruining transformations of Akira and An American Werewolf in London, until his final form is unveiled. Baldur's Gate is being invaded by mind flayers.

If you've not got your Monster Manual at hand, mind flayers are a race of Cthulhu-looking villains that use their psionic abilities to control their victims and slaves. Their glory days, when they ruled a vast astral empire, are long behind them, and the squid-faced tyrants have been skulking around in the Underdark, impressing the duergar and drow. Unfortunately, they've had an upgrade.

Mind flayers used to be able to travel between worlds via the Astral Plane, piloting massive shells with protruding tentacles known as nautiloids. They made the mind flayers even more formidable, but the art of making new ones has been lost to them. Until now. "Those are big problems," says Vincke. "They want to restore their empire, so we see the mind flayers invading a city with a nautaloid. You can imagine what might happen – but it's not what you'll expect!"

With Divinity, particularly the crowdfunded Original Sin games, Larian's been free to build its world how it sees fit. With the Forgotten Realms, however, the studio's playing with a licence that's been developed over decades, full of its own lore and rules, but Vincke says it's not been an obstacle.

LORE COPS

"There are a lot of people at Larian who play D&D and there are a lot of game sessions going on continuously, so that already makes it easier because we have the internal lore police. I'm the guy that usually tries to break it, but then I get the lore police on me. Usually that's sufficient, and our internal checks sometimes go further than Wizards of the Coast's. They're very flexible about making cool adventures, and most of the things we've pitched to them have been passes. We're really very aligned in our thinking and how we do things, but ours is just the videogame version."

Original Sin 2 already shares quite a lot with D&D, beyond the things that most fantasy RPGs share. The Game Master mode and co-op effectively let you play a tabletop RPG on your PC, but even when you're playing alone it can still feel like you're doing so under the gaze of a Dungeon Master, hoping they'll let you try this brilliant new idea you've come up with. The sheer variety of systems and Larian's willingness to let players bend or occasionally break the game leaves so much room for ingenuity. Vincke loves to talk about players solving conundrums in ways Larian had never even considered, and it's exactly like listening to a proud Dungeon Master gush about their party.

Baldur's Gate III will similarly give players lots of tools and then let them have at it. "We'll stay true to our roots," says Vincke, "so we'll give players lots of systems, and lots of agency to use these systems and try to accomplish what you need to on your adventure.

"That's not going to change; that's the core of what we're doing."

There are some things on the chopping block, however. It's an interpretation of D&D, specifically 5th Edition, because porting the core rules, which Larian tried to do, doesn't work. Or it works, Vincke clarifies, but it's no fun at all. One of the culprits is missing when you're trying to hit an enemy, and while the combat system has yet to be revealed, you can at least look forward to being able to smack people more consistently.

"You miss a lot in D&D – if the dice are bad, you miss," he says. "That doesn't work well in a game. If I do that, you're going to review it and say it's shit. Our approach has been implementing it as pure as we can, and then just seeing what works and what doesn't. Stuff that doesn't work, we start adapting until it does."

This interpretation should still be more true to the tabletop RPG than its predecessors, however, capturing the feel of D&D even if it's not borrowing every single system and rule.

PARTY PLANNER

To save Baldur's Gate you'll need a party of heroes, and like a typical D&D party they're all the protagonists of their own stories, each with their own motivations and ambitions. When you make a character, you'll be filling in your character sheet, essentially, not just with abilities and skills, but backgrounds, personality traits and ideals. While he's not ready to confirm that it will feature in Baldur's Gate III, Vincke's also interested in taking another crack at Original Sin 2's origin system, which gives players premade characters with unique backgrounds, quests and talents. They're better defined than their custom counterparts, and more connected to the world.

"I thought the origin stories were a really good addition to the RPG genre, and it would be strange if we went back on that," he says. "The ambitions for the origin stories in Original Sin 2 were actually higher than what we managed to do, though we did it well if you think about all that we fit in there, but there's so much more that can be done with it. I'd certainly be interested in exploring it."

You'll be controlling your whole party, but Baldur's Gate III will also let you strike out on an adventure with pals. Larian's not ready to spill the beans on how the multiplayer system will work, but something resembling their last two co-op systems seems likely, letting each player choose exactly where to go and what to do independent of the rest of the party. It's how it works in D&D, too, where parties can split up and one player might be getting sozzled in the tavern while another is trying to pilfer a relic from a temple.

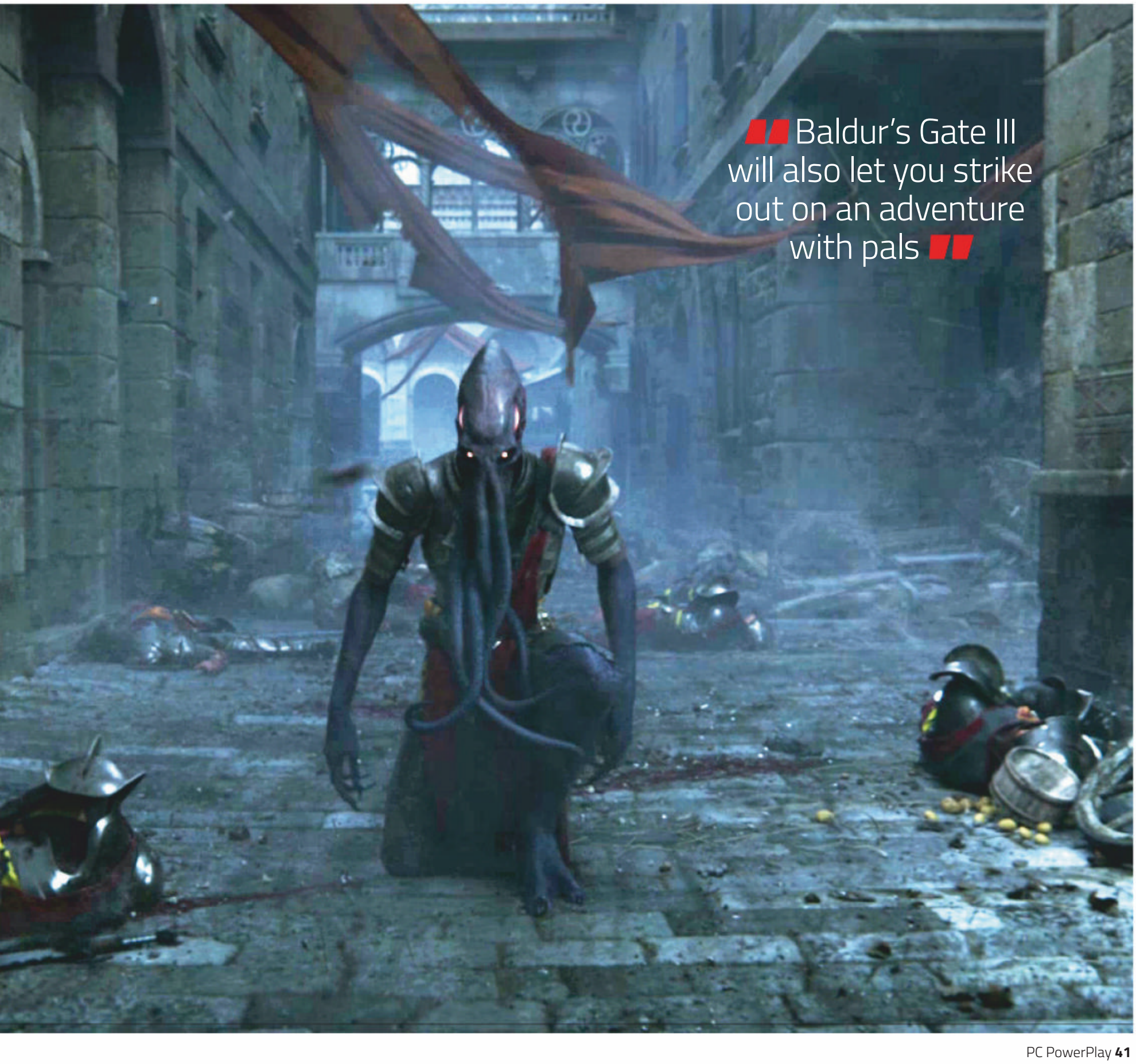
Despite the success of Larian's last two Kickstarters, it won't be going down the crowdfunding route this time. Larian will still be publishing the game itself, as well as involving the community and posting regular updates. For prospective players wanting to follow the game's development, there won't be much of a change. For Larian, though, it's the studio's greatest challenge, and when players finally get to return to Baldur's Gate, Vincke thinks they'll be very surprised by what they find. "We're going beyond what we've done before to make it the game it deserves to be. That sounds like a slogan – it is a slogan – but it's true."

FRASER BROWN PC

A natural reaction to hearing about Baldur's Gate's return.

Fun fact: mind flayers can suck your brain out of your head.

If you're wondering how things are in the city: bad.



"Baldur's Gate III will also let you strike out on an adventure with pals"

DEVELOPER INFINITY WARD • **PUBLISHER** ACTIVISION • **RELEASE** OCTOBER 25, 2019
www.callofduty.com

Call of Duty: Modern Warfare

Play both as soldiers and 'freedom fighters' in this series re-imagining.

There's been a deadly terrorist bombing at London's Piccadilly Circus. The perpetrators have been tracked to a four-story townhouse in North London. British Special Forces prepare to infiltrate the building to capture the terrorist cell's leader known as The Wolf who is presumed to be at the townhouse. All other suspects are to be eliminated.

At a presentation in Los Angeles, I got to watch (but unfortunately not play) this mission from the singleplayer campaign of Call of Duty: Modern Warfare. Members of developer Infinity Ward laid out a few reasons there isn't a '4' after the title, and why they wanted a "re-imagining" of Modern Warfare rather than a sequel. Their goal was to create a game that feels relevant and "ripped from the headlines"; that's pretty hard to do when the storylines of previous Modern Warfare games have veered so far from reality.

"In those games, by the time Modern Warfare 3 was over, nukes had gone off in the world, the Russians had invaded the United States, and so there were really no stakes remaining in that world," says Infinity Ward's Narrative Director Taylor Kurosaki. "So, what we did was we took that storyline and we put it to bed, and we said let's keep all the good stuff, all the stuff you expect from a Modern Warfare game and let's transpose it into today's world. It's more mature. It's more authentic. "

The SAS mission I watch is a tense affair as the soldiers – including Captain John Price, who appeared in the original Modern Warfare games – creep into the townhouse, position themselves in the narrow hallways, and listen to muffled voices through the building's thin walls. Night-vision goggles are switched on, doors are breached, lights are killed, and suspects are snuffed in a cold and efficient manner with silenced weapons. The sequence is disturbingly reminiscent of some of those leaked military videos you might have seen on the internet.

The soldiers have been briefed that the townhouse may also include noncombatants, which requires some quick decision-making. Most suspects are spotted with weapons and some have time to fire back, but a few others are unarmed and even pretend to surrender before suddenly grabbing for a nearby weapon. The only true noncombatant appears to be a woman holding a crying infant on one of the upper floors – everyone else is hostile. One woman even claims she was being held there against her will before suddenly lunging for a detonator. She's shot dead. The Wolf, the only enemy worth taking alive, has escaped, if he was ever even there at all.

That's the small slice of the Tier One operator missions I saw, a tense and methodical engagement in close-quarters combat. It was exciting and felt realistic (with the exception of the player picking up a shotgun off the floor

> Suspects are snuffed in a cold and efficient manner with silenced weapons.

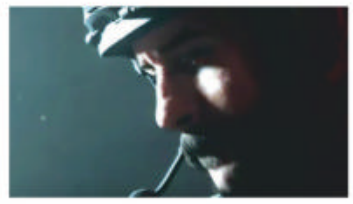
Don't point that thing at me.

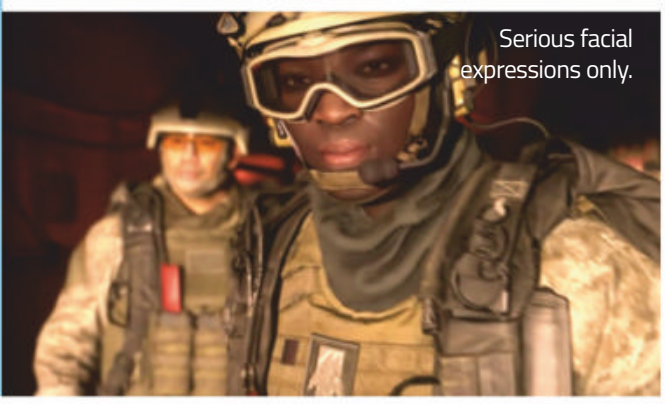
Gotta have a night vision section.

"Which of us is the one who's allowed to open doors?"

> "A great deal of attention has been paid to making the guns feel realistic."

The moustache is back.





Serious facial expressions only.

and deciding to use it instead of the weapon he brought on the mission, which seems risky and unlikely). But I also got a look at another mission, a much stranger and more off-putting sequence featuring an entirely different kind of combatant.

GUERRILLA TACTICS

In Modern Warfare, you don't spend the entire singleplayer campaign playing as a professional soldier kitted out with expensive gear and access to the best in modern combat technology. You also play as a 'rebel freedom fighter', which presents you with different challenges.

"You're going up against enemies who are technologically superior to you," says singleplayer design director Jacob Minkoff. "All you have are improvised weapons like molotov cocktails, IEDs, and you have superior numbers. But you have to use guerrilla tactics, you have to set ambushes, you have to use your superior numbers and your knowledge of the environment against the enemy."

What I saw, though, wasn't quite that. The mission takes place 20 years prior to the terrorist attack in London, when a young girl who is maybe six or seven years old is dug out of the rubble after a bombing in the Middle East. This is Farah, who will grow up to be the rebel leader you play in Modern Warfare, but this is her origin story, and it's a rather familiar one. Her town bombed by military forces and her parents killed in front of her, she's a traumatised child who grows up looking for vengeance. I assumed it was an American bomb that destroyed Farah's town, as that would certainly be relevant and "ripped from the headlines" even 20 years ago. But no, the bombers were part of some sort of Russian military outfit, and in addition to murdering citizens they're also abducting children.

STEALTH SCREWDRIVER

With her father dead, Farah and her young brother hide in their house from a heavily armed, hulking Russian soldier, and rather than fleeing they decide to attack him. The mission looked to me like a tutorial to teach players how stealth works, and little Farah creeps around the house, picks up a screwdriver, and impales the Russian with it. Then she hides again while the Russian pulls the screwdriver out of his body, drops it, and continues to search for her. Farah crawls under furniture and through a hole in the walls, retrieves the screwdriver, and stabs him again. This repeats three or four times, until Farah and her brother eventually kill the soldier and then, in true videogame form, immediately attempt to loot his body. It is, quite honestly, a bizarre sequence, and an odd choice to attempt to tell a compelling origin story while also teaching stealth attacks and loot mechanics.

Farah and her brother eventually stealth their way out of town and reach a farm, where they find a gun and prepare to take on more Russian soldiers. "This is the most authentic and realistic game we've ever made," Jacob Minkoff says. I don't personally find two little kids killing an enormous Russian grunt with a screwdriver particularly realistic, and rather than being ripped from the headlines, Farah's origin story instead appears to be ripped from about 50 different movies and TV shows.

At least there's more impressive weapons than screwdrivers in Modern Warfare. As always, a great deal of attention has been paid to making the guns feel realistic, weighty and fun to shoot. Even the tiniest details like idle animations and reloads have been reworked – you can now see yourself perform a tactical reload, which is when you've fired a few shots and your magazine isn't empty but you want to replace it with a fresh one. Rather than your hand simply pulling out the mag, going offscreen, and returning to pop in a fresh mag, you'll actually see your soldier visibly keep the first mag in his hand while replacing with the second. It's a small detail, but an excellent one. And good news, you can now reload while you're aiming down the sights.

The audio is excellent, too, though admittedly I was watching the presentation in a theatre setting and not listening over a headset like most of us will when the game is released. But the finer details of the audio are again impressive, even when it comes to expelled shell casings, which actually make different sounds depending on what sort of surface they land on. The audio even uses ray tracing to deliver realistic sounds, reverb and echoes depending on your position.

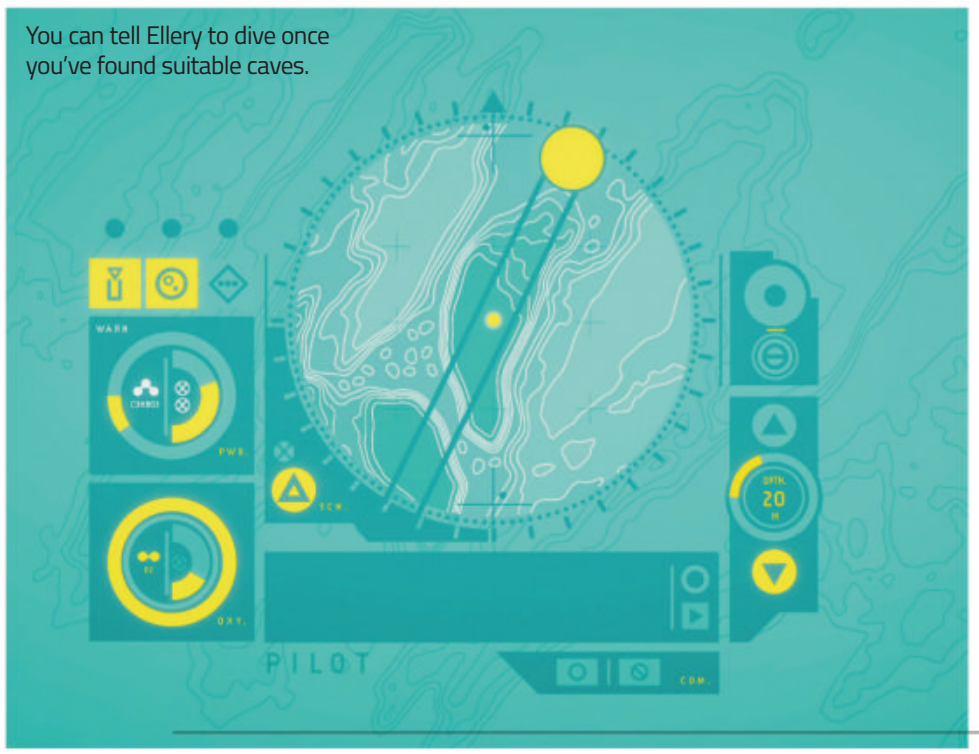
Call of Duty: Modern Warfare is scheduled for release on 25 October and once again on PC it'll be exclusively available on Battle.net. It plans to support cross-platform play at launch and won't have a season pass this time.

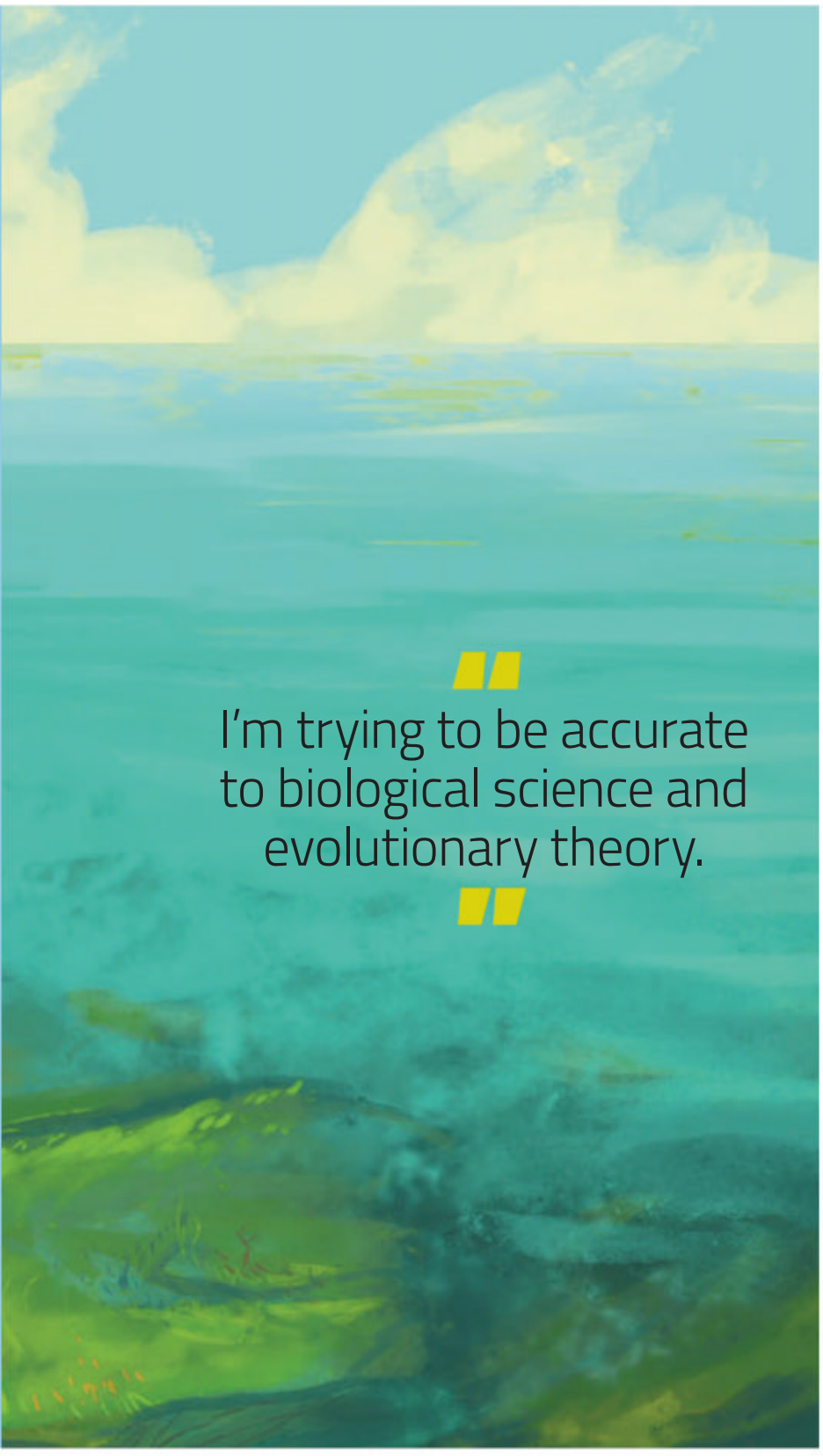
Again, I didn't get any hands-on time with Call of Duty: Modern Warfare's singleplayer campaign, as this was just a presentation and only provided a brief look at two missions. But in keeping with Call of Duty's long history, the re-imagined Modern Warfare is looking technically impressive and narratively wobbly. When Infinity Ward says it's going for an authentic and realistic game, I'm more inclined to think they're talking about the authenticity of its gun models and sound effects rather than the content of the story.

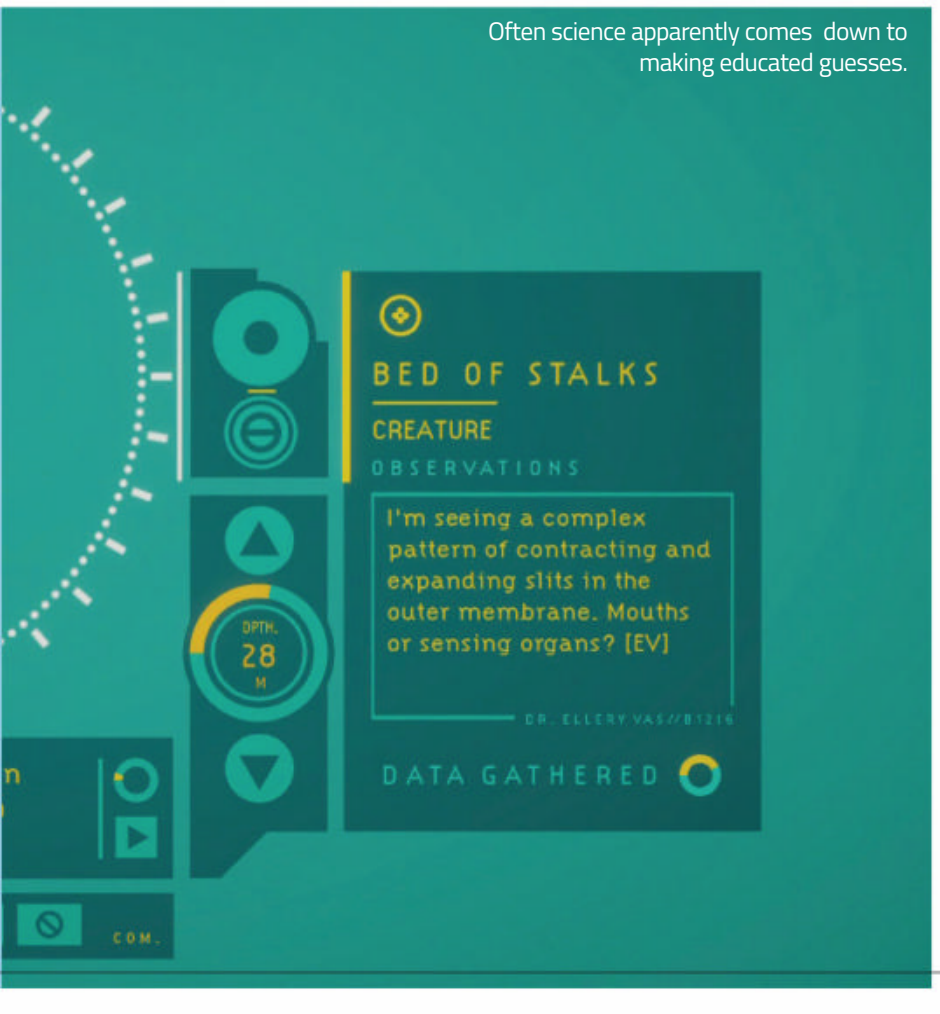
CHRIS LIVINGSTON PC

Deep dives for science!

You can tell Ellery to dive once you've found suitable caves.







Often science apparently comes down to making educated guesses.

DEVELOPER JUMP OVER THE AGE • **PUBLISHER** FELLOW TRAVELLER • **RELEASE** SPRING 2020
www.jumpovertheage.com

In Other Waters

Under the sea new life forms are waiting for me.

In Other Waters shrinks the entirety of an alien ocean into one interface. You're the AI that accompanies xenobiologist Ellery Vas on her dives into the oceans of Gliese 667Cc in search of life that may help sustain mankind, while trying to find out what happened to her partner, who disappeared during a prior mission.

All you see of Ellery's adventures is a map – Ellery herself is a little dot, as is everything she encounters. As you scan the environment for anything from environmental clues about the ecosystem to plants and creatures for Ellery to study, descriptive text from the interface itself as well as Ellery's observations tell you what's going on down in the depths. For developer Gareth Damian-Martin, giving players a simple interface is a way of allowing their imagination to flourish. "I don't think a game's strength lies in its fidelity. There are many games that function entirely on the strength of their descriptions coupled with some good sound effects."

One such game, which Damian-Martin cites as an inspiration for In Other Waters, is Adam Saltsman's Capsule, which takes place entirely on a radar. He also tells me of a holiday by the sea during which he started to think about designing his own creatures that you could then study. "In another life I would've been a marine biologist," he says, "So I always thought a lot about how to represent diving and elements of biological study in a game."

THE BIG BLUE

In Other Waters tickles the same urge to explore games like No Man's Sky and Subnautica inspires, but rather than make exploration the tool by which you escape death, in the demo I mostly get lost in the wonder of discovery. Ellery's studies will in time reveal what her partner Minae Nomura might have studied before her disappearance. For now, In Other Waters lets me play at being a scientist just by repeat encounters with different plants. Each new scan gives Ellery an opportunity to note something new, until she can eventually take a sample. You can then have her use that sample either to power her suit, interact with the environment to solve puzzles or keep it for later.

"Since all you see are dots, I want my creatures to move and interact with each other in interesting ways. They should be interesting enough for you to want to examine them further." Damian-Martin doesn't only design the creatures, but entire small-scale ecosystems. "On some level I'm trying to be accurate to biological science and evolutionary theory. All of the areas in the game have specific ecosystems. They're based on [evolutionary theorist and biologist] Lynn Margulis' idea that symbiosis is the driving factor for evolution."

Since players interact with everything through the user interface, it has to be easy to understand but not too sterile. Simple commands for acknowledging Ellery via yes or no answers, and some pleasantly responsive knobs to fiddle with when extracting samples or guiding your diver are all it takes to get results. The overall colour scheme represents the environment Ellery is in, but like the map, the interface stays deliberately simple.

"I don't follow strict graphic design rules for the interface because I want it to be expressive, kind of like the interfaces you see in anime from the '80s," Damian-Martin explains. "They aren't function first, but they feel more organic."

In Other Waters has taught me about scientific study, and knowing how much went into it, I look forward to it even more.
MALINDY HETFELD PC

DEVELOPER CHANCE AGENCY • **PUBLISHER** FELLOW TRAVELLER • **RELEASE** 2019
www.neocabgame.com

Neocab

Explore the relationship between emotional health and employment.

We meet protagonist Lina en route to her new life in Los Ojos, California. Known as Automation City, most of its workforce has been replaced by AI designed by megacorporation Capra. Lina's never been to Los Ojos, but she's planning to be the city's only human cab driver.

NeoCab may take place in a dystopian future, but the setup addresses contemporary issues. Capra could well be an analogy for the Googles and Amazons of today. Soon after Lina arrives, her best friend Savy disappears, and she has to dive deep into the workings of Automation City. All the while, she has to make a living, and so you balance your search for clues with your job. You choose a passenger on your map, meet them at the designated pick-up location and then drive them were they want to go. Each night you're trying to keep your car's battery charged, hit your income quota, and maintain a four-star customer rating to avoid losing your job.

TAXICAB CONFESSIONS

"We want to emphasise the value of interpersonal connections," creative director Patrick Ewing tells me. "Throughout the game people ride with Lina repeatedly because the automated rides aren't working for them. They want to have more conversations." Meanwhile Lina's ability to empathise with others can take a toll on her personally. Locked in a confined space with a stranger, conversations can get awkward, and by selecting Lina's answers and monitoring her emotional well-being you constantly ride the line between a good rating and speaking up for yourself. In order to tell what Lina is feeling, you can check her Feelgrid, a wristband that communicates her emotions through colour. Once Lina is intensely angry for example, her Feelgrid will turn red, telling you it's time to do or say something that may calm her down.

"We've taken inspiration from Papers, Please in giving you a choice between the actions you need to take in order to be successful at your job, and the things you're prepared to make sacrifices for because they're right"

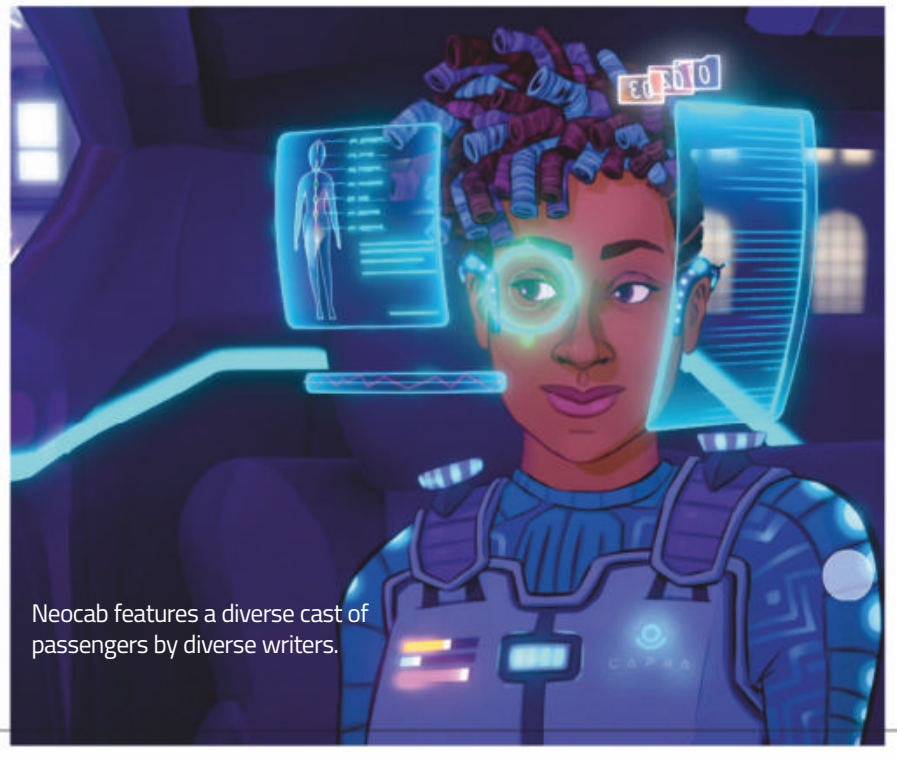
This can include small things like choosing to avoid a parking ticket that would result from meeting a passenger at their requested location, to helping a young woman get away from home even though her mother holds the NeoCab account she used to request a driver.

Chance Agency also turns a critical eye to automation, and throughout the game you will have just as many people arguing the cons of self-driving cars as the pros. "Cars are dangerous and I do believe automation will eventually decrease the mortality rate," says Ewing. "Driverless cars, the core catalyst of the events in NeoCab, will replace a large number of drivers within the next five to 15 years. That's going to happen in the near future, and cyberpunk is supposed to be a way to portray that extreme we could be headed towards."

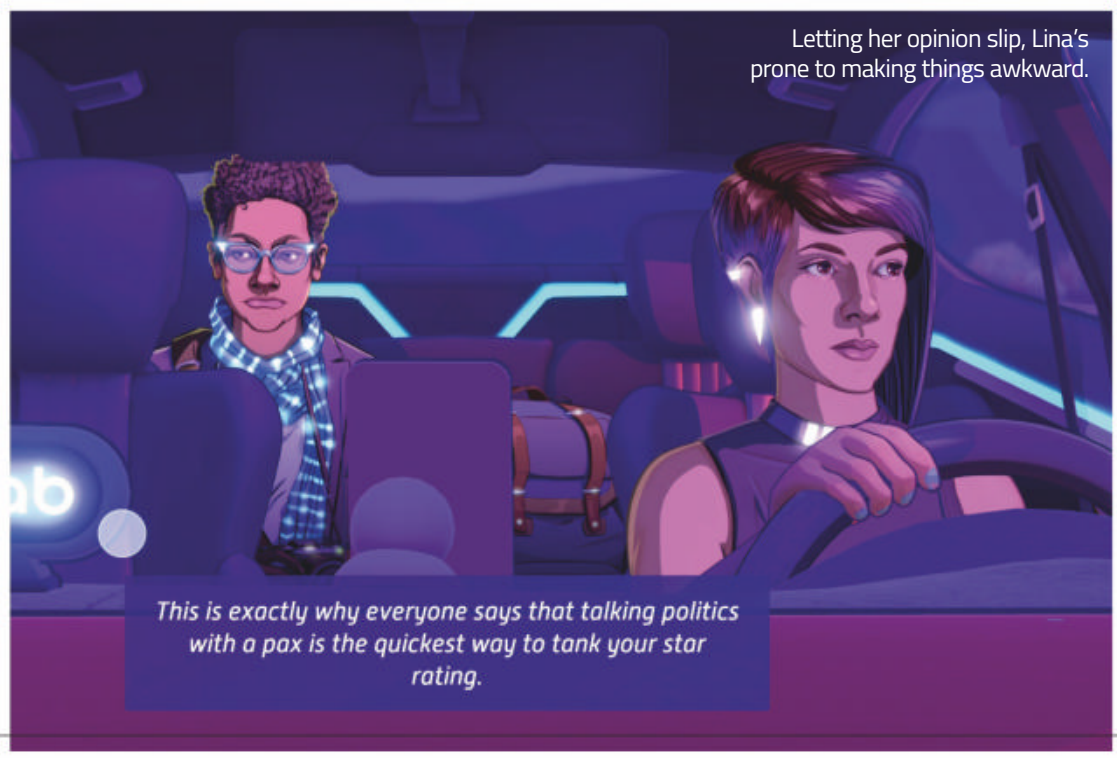
Ewing also acknowledges there's several ways to look at the gig economy. "I use these services myself and have friends who are drivers. Formal interviews and informal chats form the backbone of my research. Again, you need to acknowledge the conditions these people are working under. We want to offer hope – Lina's work may be undervalued, but she can still enjoy it, be good at it and make a difference to someone else."

MALINDY HETFELD PC

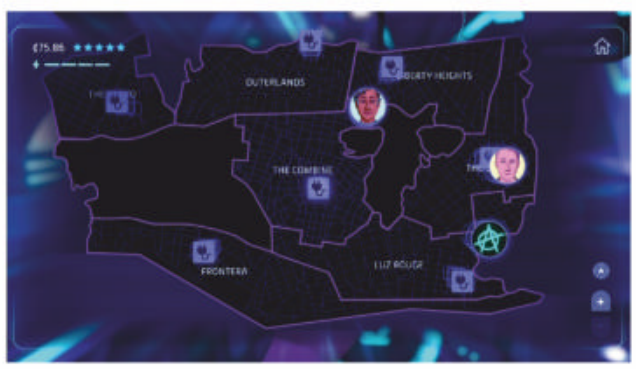
One night, Savy disappears – is tech giant Capra involved?

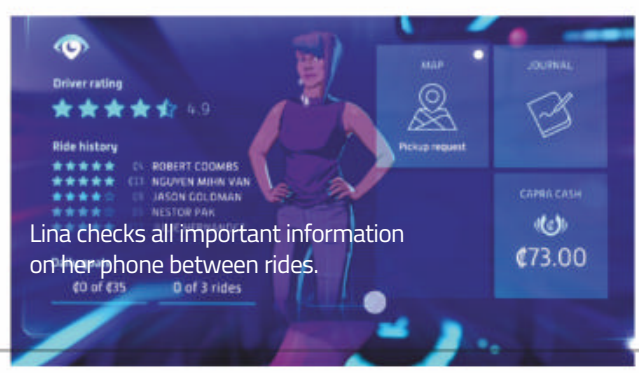


Neocab features a diverse cast of passengers by diverse writers.



Letting her opinion slip, Lina's prone to making things awkward.





Lina checks all important information on her phone between rides.

Eastward is chock-full of beautiful details and interesting characters.

John steps back to let Sam pull her weight.

The architecture portraysa hopeful post-apocalypse.

DEVELOPER PIXPIL • **PUBLISHER** CHUCKLEFISH • **RELEASE** TBA
www.eastwardgame.com

Eastward

A trip back to the golden age of Asian RPGs.

One look at Eastward, and you can immediately tell what made the pixel art aficionados at Chucklefish fall in love with it. From colourful environments filled with detail to the unique characters softly bouncing with each breath, Eastward feels alive, even though it's set in a world that's anything but.

With Eastward, developer Pixpil has decided to go all out – the first project for the Shanghai-based team is looking to Japanese RPGs from the late '80s and early '90s for inspiration, a genre that originated enduring videogame characters and approaches to adventure gameplay. You take control of John and Sam, a taciturn miner and a small girl with a magnificent mane of white hair. Together they travel a post-apocalyptic world. Pixpil is staying as tight-lipped as John about any plot details, but they did let slip that the fact that Sam uses magic makes her someone really special.

SUNSHINE STATES

The warm feel to Pixpil's version of the apocalypse is a deliberate choice, as Pixpil co-founder and lead artist Hong Moran explains, "People, including us, tend to romanticise old worlds as something in which myths can be found and unfolded. This feeling is a major reason we chose to create a post-apocalyptic world and also why it doesn't feel too downtrodden."

What I saw of the game was a mix of straight-forward puzzling with combat similar to action RPGs such as Fable. To take on the monsters freely roaming the world, I can switch between both characters at any time – John wields a shotgun and is also very handy with a frying pan. Sam's magic is useful at long range. To navigate a forest full of flesh-eating plants and wild animals, I also need to solve the occasional puzzle.

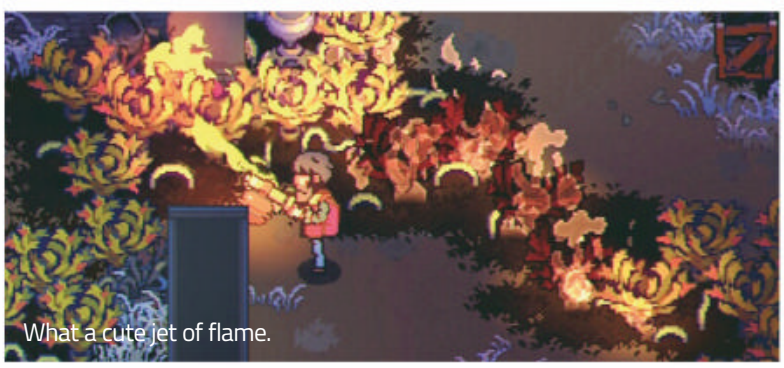
John can clear away obstacles like debris using bombs, certain plants react only to being zapped with Sam's magic. Pixpil's narrative designer Pan Chen tells me that players will be able to find more weapons in the finished game that will allow them to progress to previously inaccessible locations. According to Tommo Zhou, Pixpil founder and Eastward's producer, the goal is ultimately to keep things simple, "Players get limited upgrades and new items throughout the game, but we want to ensure everything stays fun and intuitive. Rather than bog you down with stuff, we want to incorporate how you can switch between John and Sam into a variety of puzzles."

ASIAN PERSUASION

The Japanese flair of the city I saw in the demo is so strong I asked if Pixpil has brought more of their native Shanghai to the game. According to Zhou and Moran, this particular in-game town with its trams and wooden sliding doors is inspired by Showa and Taisho-era Japan, and you'll also be able to visit areas reminiscent of Hong Kong and Shanghai and find architecture inspired by South Korea and India. As much as I love the Japanese architecture I've seen in the demo, it's always interesting to find locations in games inspired by the fantastical.

Apart from JRPGs, Pixpil also definitely know their anime and has been inspired by an eclectic list of titles, including Akira, Macross, and works by Studio Ghibli. Pixpil has a grand vision – even with how little it's revealed, particularly in terms of narrative, it sounds like a tall order. I'm all for more developers from different countries reaching westwards and curious to see how it'll all come together.

MALINDY HETFELD PC



What a cute jet of flame.

A LONG TIME AGO

How **KNIGHTS OF THE OLD REPUBLIC** stayed true to the Star Wars 'used universe'.

By Alex Kane

What makes a movie, comic book, or video game feel like Star Wars? This is the question every creator has to wrestle with when they're approached to work on a story set in that universe.

When George Lucas began working on the original Star Wars in the 1970s, his aim was to make a film that looked timeless – never mind the endless budgetary and technical limitations he had to contend with. Production designer John Barry and set decorator Roger Christian proposed the notion of a "used universe", a term that's come to be associated with Lucas and the success of the classic trilogy over the years. The idea was to avoid the polished chrome and utopian vistas of earlier science fiction movies in favour of something a bit more tangible: the grimy, kitbashed, lived-in aesthetic of the Mos Eisley cantina or the Millennium Falcon. Props and sets could be assembled from existing parts, and in turn the whole production would be less expensive.

BioWare insisted on following these same design principles during the making of Knights of the Old Republic. One look at the game's cover is all it takes to spot the similarities – the rusty flying-saucer pirate ship, the hero brandishing her laser sword, the R2-D2 and C-3PO analogues, the Universal-monster-movie villain.

This is an extract from Star Wars: Knights of the Old Republic, published by Boss Fight Books and written by Alex Kane. Boss Fight Books publish nonfiction works about classic games, including Jagged Alliance 2, Baldur's Gate II, World of Warcraft and more. For more, visit bossfightbooks.com.

"The reason I draw pictures, what galvanised me as a ten-year-old boy, was Star Wars on the big screen," says John Gallagher, who designed most of the game's characters and costumes. "It changed my life."

Gallagher worked in broadcasting, writing and producing television commercials, prior to joining BioWare. Like most of his peers, he was a neophyte in the games world. "But I've drawn my entire life," he says. "Anybody who knows me knows that, from the time I could hold a crayon, that's really what I was doing. It was kind of in my DNA." He spent a total of nine years with the company, witnessing its humblest beginnings and staying on until 2004, two years into development on Dragon Age: Origins.

KotOR is a particularly cherished memory for Gallagher because it gave him the chance to meet his hero – Star Wars production illustrator Ralph McQuarrie.

JEDI COUNCIL

In 2001, following months of preparation, work on the game began

in earnest. “Once the post-orgasm glow [of getting the Star Wars licence] was diminishing,” Gallagher says, “we had to get down to business.” All of the team leaders on the project at BioWare flew down to the San Francisco Bay Area to spend a day with the Lucas camp. For the art team – Gallagher, lead animator Steve Gilmour, and art director Derek Watts – that meant a trip “across the pond” to Berkeley, where McQuarrie and his wife lived. There, the BioWare folks were treated like visiting dignitaries. They got to hold the Oscar that McQuarrie had won for Best Visual Effects with Cocoon. McQuarrie showed them his original work, offered advice, and shared stories about “George and the old days”.

“That was life-changing,” Gallagher says. “I got to sit at the feet of the master and spend a few hours with him. He was an extraordinary human being, and just a natural

McQuarrie hadsome words ofwisdom for the artists

pleasure to spend time chatting with. And you feel like the circle’s complete. If Ralph gives you a thumbs-up, then you feel like ‘Okay, now I can go do this’. And he’d entertained diplomats and kings. I was just another asshole who drew pictures.”

Most artists struggle with some degree of impostor syndrome – the fear that, no matter what they accomplish in their chosen creative field, sooner or later they’ll be exposed as frauds. Even if your name is Ralph McQuarrie. Even if many credit you with envisioning the singular look of the entire Star Wars universe.

McQuarrie told Gallagher about a stroll he took one night in 1977. He liked to go for walks in abandoned spaces – at the docks, in industrial zones, in warehouse districts. On this particular night, though, McQuarrie happened to be on Hollywood Boulevard.

“He was walking along, a little bit of a breeze blowing,” Gallagher says. “Nobody else around. And this paper packet rolls by him – a little wrapper. He looks down and it’s a Star Wars wrapper, for the collectible cards, with a blue-and-yellow Darth Vader on the front. Fifteen cents. It hits him in the shoe, he bends over and picks it up. Says, ‘Huh. Guess I’m gonna do okay at this’.”

For Gallagher, working on Knights of the Old Republic wasn’t just another job, it was a chance to contribute to the galactic sandbox his hero had helped dream up decades earlier. There was an enormous amount of pressure to get it right. Fortunately McQuarrie had some words of wisdom for the artists at BioWare.

“He didn’t really have to tell me this, but he said, ‘Always push back. Be of service, but let them understand that they need you more than you need them’,” Gallagher remembers. “And he wasn’t being confrontational or gnarly. It was just, ‘Hey, man, you’re an essential voice here, and your contribution means a phenomenal amount to the process’. That was his bit of advice for me, anyway – be your own boss, don’t take their shit, and you’ll be fine.” McQuarrie also told them, “Enjoy the process itself.”

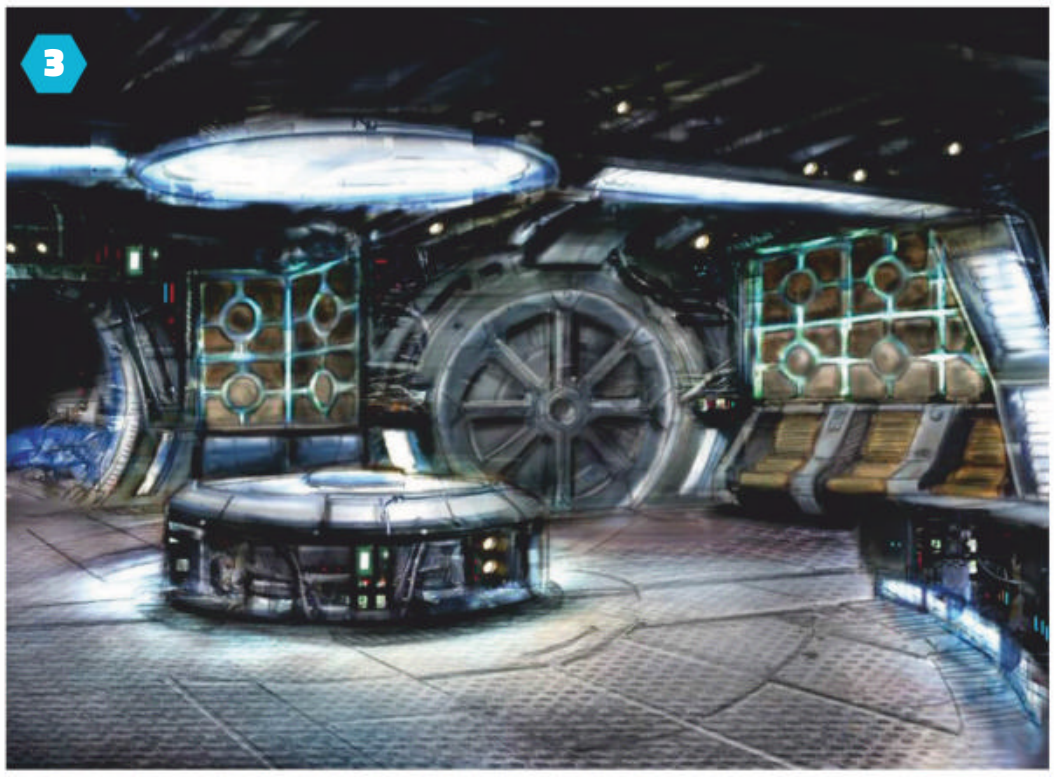
Luckily, Gallagher wasn’t left alone to create in a bubble. Every step of the process was a collaboration between

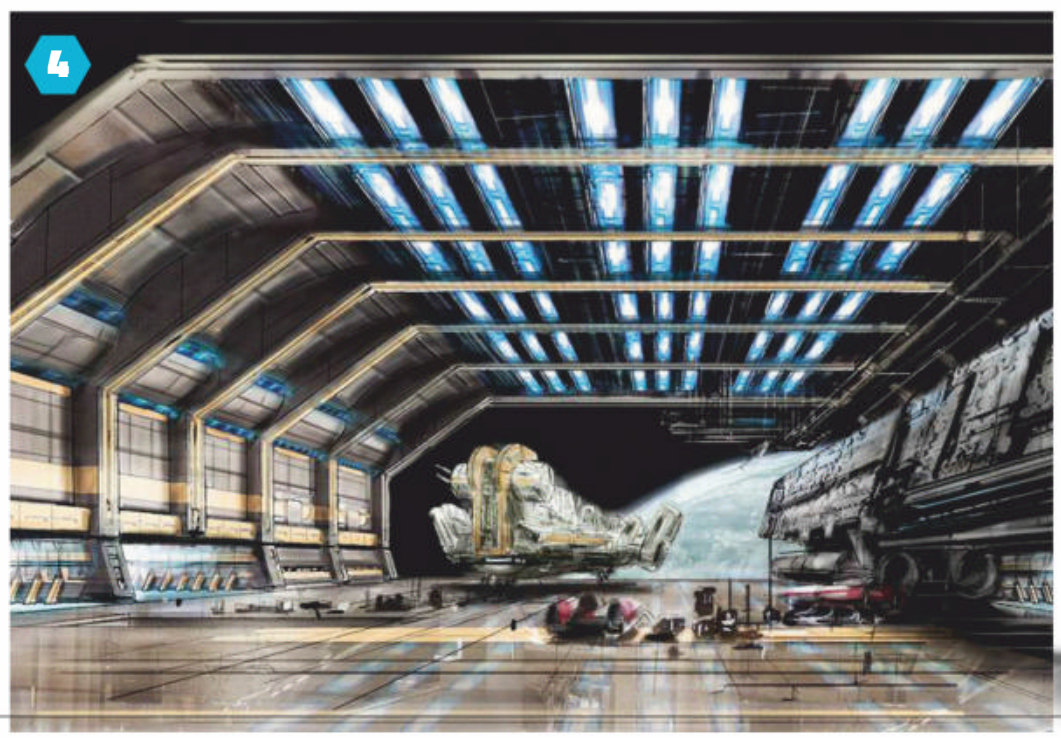
1 Concept art for HK-47, one of KotOR’s most beloved characters.

2 A concept illustration of Taris, where your adventure begins.

3 The interior of your ship recalls the similarly shabby Millennium Falcon.

4 This huge hangar is classic Star Wars, illustrating incredible scale





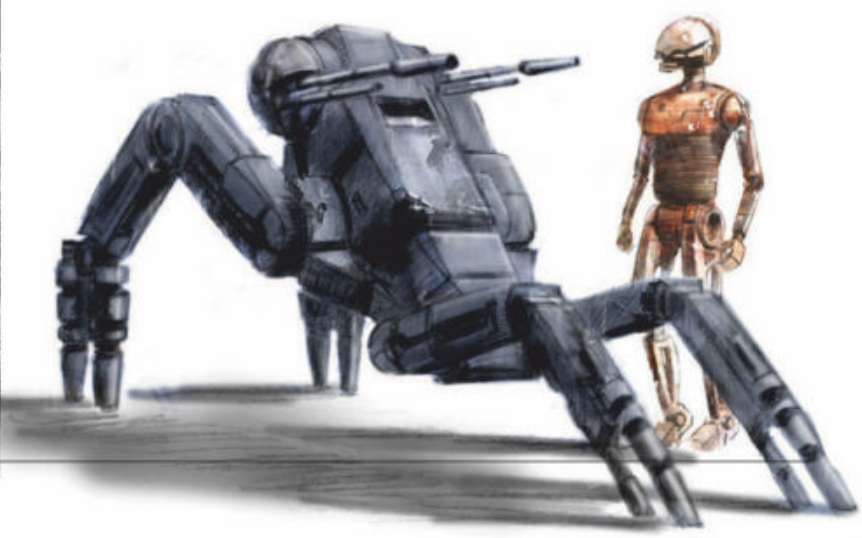
BioWare's art, design, and writing teams. No single person was responsible for a given character.

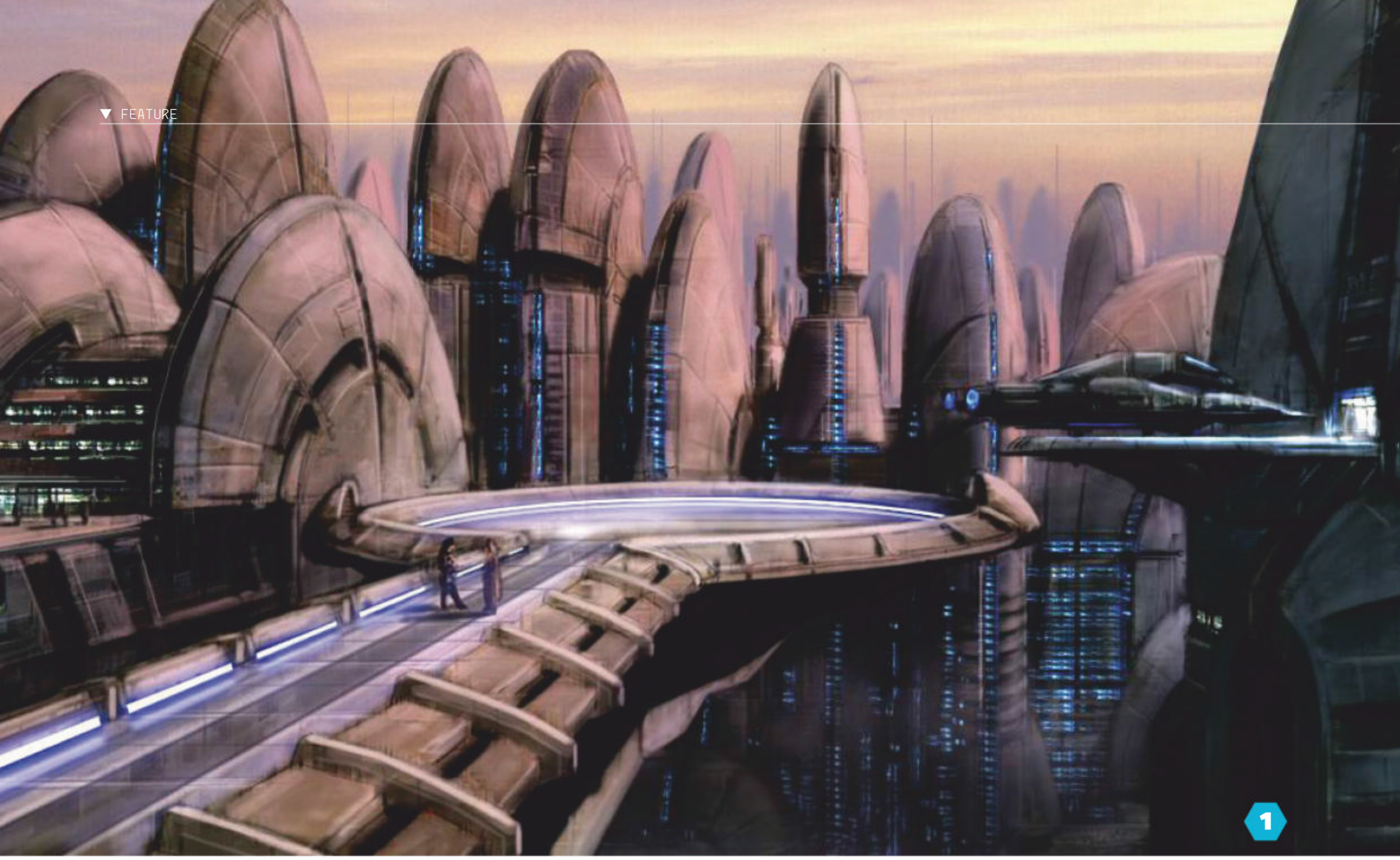
"James [Ohlen] and I had a creative shorthand," Gallagher says, "and we'd finish each other's sentences when it came to design. James would usually just say, 'Well, make somethin' cool'."

Growing up, Ohlen had served as Dungeon Master for his friends in Grande Prairie, Alberta, and the West End Games Star Wars RPG was a favourite pastime. "I took characters from the campaign I ran, their names and personalities and stuff, and those inspired some of the characters in Knights of the Old Republic – Carth, Bastila, Zaalbar, and Mission," he says. "That was a quick source of inspiration. I'd done that with the Baldur's Gate series, too, because it takes a long time to create characters sometimes. I would go back to characters that had been developed over years of playing in a role-playing game."

"Naming characters is always one of the hardest things to do," says project director Casey Hudson. "But [the self-exiled Jedi] Jolee Bindo [got his name from] an imaginary friend that I had when I was three years old, that I invented. And I have no idea where that name came from, but it's just one of those that – you know, when you're searching for stuff, you just draw from your background."

The Twi'lek rogue Mission Vao "was originally supposed





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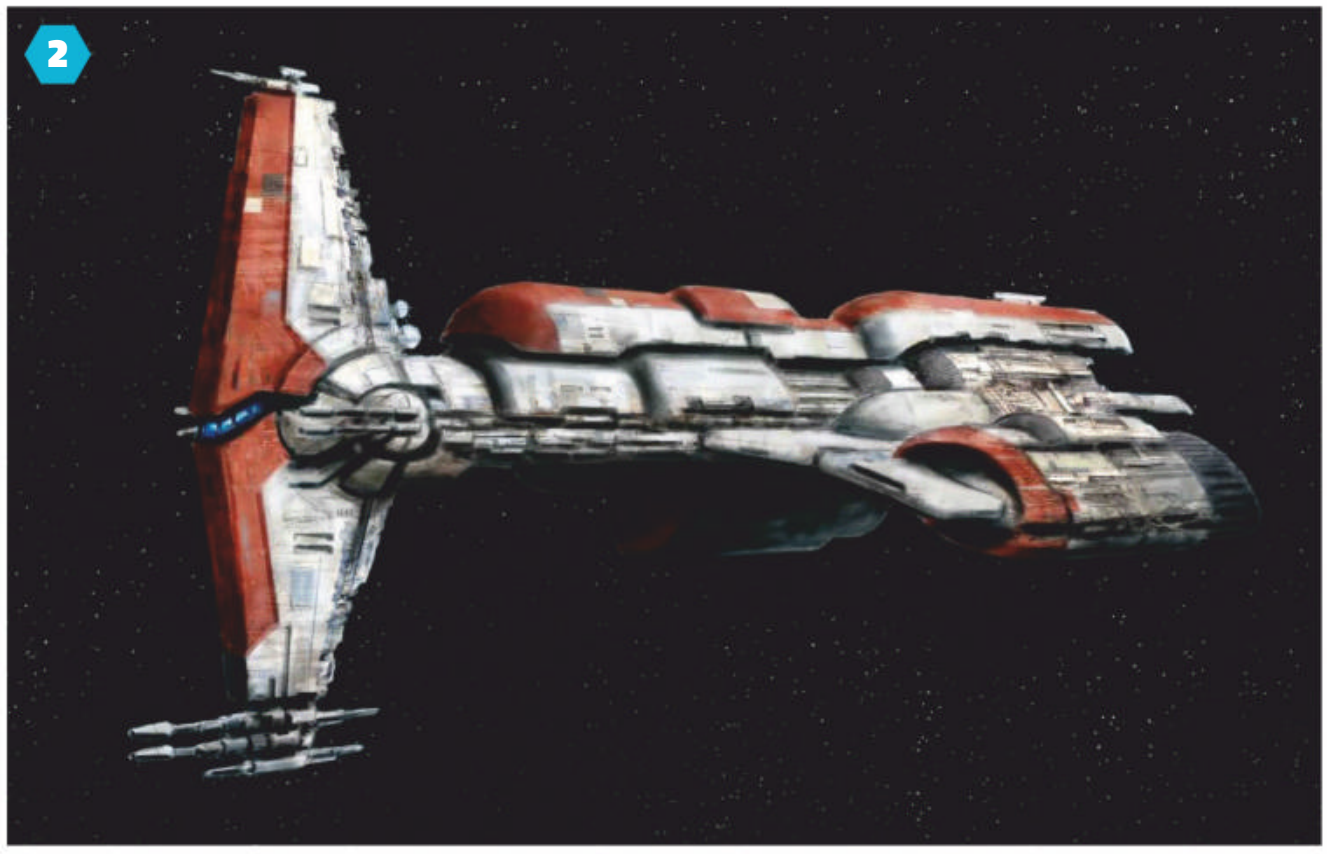
to be a young male, maybe a teenager or in his early 20s, based on some of the concepts that we had" according to art director Derek Watts. "But we decided to make her female." Even after settling on the character's gender, the team at BioWare continued to push for a design "more like a cute teen and less like the kid from Terminator 2" as Watts told Electronic Gaming Monthly. "Everyone was fine with the new look except for one of the writers, who thought she was painted up too much. We reminded him that he wrote a line for Mission that said, 'If you don't watch out, you'll have to deal with my furry friend'."

Ideas usually began with BioWare's core leadership, including Hudson and Ohlen, but developers would often find other ways to incorporate pieces of themselves into the game. One example of this is Pazaak, an in-universe minigame based on blackjack.

"We wanted to have a card game, and I am a frequent visitor to Vegas," says writer Drew Karpyshyn. "So I was the one who actually designed the basics of how Pazaak would work, the rules system, and then worked with one of the programmers to implement it into the game." But cardplaying wasn't the only hobby of Karpyshyn's that made its way into the project.

"I used to play on a billiards team," he says. "Four of the people on it were named Harrison – several brothers or various relatives. And we were gonna call ourselves the HK-41s – four Harrisons and one Karpyshyn. We said, 'Well, it sounds more like the AK-47 if we call ourselves the HK-47s'. So that was the name of my billiards team when I played in the league. And when they found out I was working on a Star Wars game, [my teammates] were like, 'Oh, you have to make a robot called HK-47'."



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DESIGN DIFFICULTIES

KotOR players encounter the murderous protocol droid HK-47 in a junk shop on Tatooine. He's remembered fondly as a source of comic relief, as written by designer David Gaider, and also for his menacing, alien design.

For Gallagher, HK-47 was a far less personal affair. "It was a very short conversation," Gallagher says. "James just said 'I need a badass C-3PO'. So all I did was essentially use a bilaterally symmetrical protocol-droid physique, with a little bit of enhancement and a snake head, which is really the inspiration for the broader, flatter face. And it was a

> I probably did 20 iterations of each character, essentially.

copperhead, as I recall.

"So that's really the inspiration, he was a copperhead C-3PO. And, of course, his personality is what really carries the day, but his physical personality has to reflect his disposition." The similarities to C-3PO didn't stop at the physical. In a nod to the more famous droid's origin story – that he'd been built by young Anakin Skywalker long before he became Darth Vader – HK-47 is revealed to have been owned by none other than Darth Revan himself.

Of course, the artists and designers working on the game didn't always agree with one another, and they weren't afraid to say so.

One especially contentious character was Darth Malak, the Sith Lord hunting the player throughout the game. At some point, Malak suffered a lightsaber blow to the face – his most striking feature is a metal prosthesis where his lower jaw used to be.

"I gave James shit about [the Malak design]," Gallagher admits. "Because I thought it looked like Mort from Bazooka Joe and His Gang. I was like, 'What the hell is that? You should just have a turtleneck [covering his mouth]. He got his mandible cut off?'. I was like, 'For fuck's sake, James. Really?'."

"I was outvoted, obviously," Gallagher remembers. "And I didn't go away and sulk or anything. I said 'I'm not gonna design Malak because I think it's a terrible idea'. I was designing other elements for the game, and there was a shit-ton of stuff to do, so I was just like 'Derek probably has a good handle on this'. And we ended up with the Malak concept. It doesn't bother me. It doesn't insult me. I just don't think it's a very well-realised design."

Malak aside, Gallagher's fingerprints are all over the art design in the game. He designed the vast majority of the characters – as well as many costumes, props, and vehicles.

"I probably did 20 iterations of each character, essentially, if you did a head count," Gallagher says. "As I recall, we were creating by chapter, so the people we meet first in a meaningful way, in terms of story, are the first ones you take a crack at.

"And once you break the neck on the core design, and you're honouring the Star Wars aesthetic while trying to add your own flourishes in there, then you move forward and cut your teeth on Revan and the Sith. Because it was Star Wars, and we were following the Star Wars methodology, where you offer a multitude of variants on each [character design]. And it's subtle permutations, where you go 'Okay, that's the one'. Or 'That head combined with those legs, and that works'.

"I was drawing it all up with marker at that point. I wasn't working digitally, it was too slow. I was just grinding out analog art." PC

1. This concept art channels Cloud City from The Empire Strikes Back.
2. Concept art for Endar Spire, the capital ship where the tutorial takes place.
3. As well as stats, your character's clothes are also dictated by class.

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YOUR GUIDE TO THE LATEST PC GAMES.

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SCORING SYSTEM

PCPP scores its games on a 1 to 10 scale. The higher, the better – though 10 is by no means a "perfect" game. We're not convinced such a thing exists, so consider a 10 a masterpiece of PC gaming, despite its inevitable flaws. A 5 is a decidedly average game; one that doesn't excel in any particular area, without being an affront to our senses – the ultimate in mediocrity. Below this, you'll start to find the games our reviewers suffered an aneurysm getting through; above it, the titles truly worth your time and money. And remember: a score is only a vague indication of quality. Always read the full review for the definitive opinion!

POWERED BY
REPUBLIC OF GAMERS

Total War: Three Kingdoms

For good and for bad, Total War: Three Kingdoms certainly is a Total War game.

DEVELOPER CREATIVE ASSEMBL • **PUBLISHER** SEGA
www.totalwar.com/games/three-kingdoms

Two of my generals dismount in the middle of a field to duel with their opposing numbers. The rest of the battle continues in the distance, but I've zoomed in to watch the flashy moves as the generals kick and stab each other instead. Occasionally a flurry of arrows or a riderless horse will pass in the background, but for the moment I'm intently focused on something that looks more like a game of Tekken.

Total War: Three Kingdoms embraces the story it's inspired by, Romance of the Three Kingdoms by Luo Guanzhong, rather than strict historical accuracy. Soldiers can run around the battlefield seemingly forever without getting tired. Their leaders are larger-than-life figures with complicated backstories and rivalries, who carry legendary spears and are able to defeat entire units single-handedly. Characters like Cao Cao are cast as devious opera-villain masterminds able to manipulate wars into existence at the drop of a hat, when the history books suggest he was a decent ruler and also quite a good poet.

There's an option to turn some of these things off at the start of a campaign by engaging Records Mode. With it, stamina plays a more important role in unit repositioning, and it also gets rid of the duels and gives generals bodyguards to do most of the fighting instead. The alternative, Romance Mode, feels like an honest embrace of what Total War has really been all along, though. It's a version of history that's closer to an epic movie, where the broad sweep is familiar but the subtleties are ignored whenever they would be inconvenient to the action.

That said, it's still the kind of epic where you'll also have to increase three different types of income by small percentages. The systems that were simplified for the Warhammer games or the trimmed-down Thrones of Britannia have returned to the party and brought some new friends. Espionage has its own menu full of options so that embedded spies can mess with trade or sabotage cities. Characters have a satisfaction score that will drop if they're not promoted regularly enough. Court positions that are unlocked as you level up have to be handed out carefully to prevent dissatisfied generals from starting a civil war. (You can also give them a nice water clock that will boost their satisfaction.)

Nobody loves shouting "craven" as much as someone in Total War.

WHY SHOULD I CARE?

+ Your nature is irrepressible
+ You like big armies and you cannot lie
+ You're still a Total War tragic even after Rome II.

MAKING PACTS

Diplomacy is one of the most substantial and welcome areas to be changed. Where before there was so much guesswork involved that dealing with rival nations felt like passing notes in class and then waiting for an answer ("Do you want to form a defensive alliance with me, y/n") in Three Kingdoms it's completely transparent.

Whenever I ask a neighbour for something there's a button to automatically figure out what it would take to make that deal work. It just straight-up tells you how much money will guarantee this trade of territory or food or even marriage, rather than making you stab in the dark then try again when it fails.

There's a finer grain to the diplomatic options as well. Between non-aggression pacts and alliances there are coalitions, unions that act as a step along the path to confederation without being guarantees of friendship forever. They allow for more than two members as well, so my Confederation to Defeat the Barbarians has new faction leaders lining up to join it on the regular.

Vassals are an important part of Three Kingdoms, with factions much more eager to suggest handing some of their income over to you in perpetuity, though they may demand a degree of autonomy at the same time. Your enemies can even submit themselves to vassalage under your allies as a last-ditch attempt to end wars, forcing you to either give up on your conquest or upset the ally in question.

WORLD OF WARLORDS

Rather than choosing a faction at the start

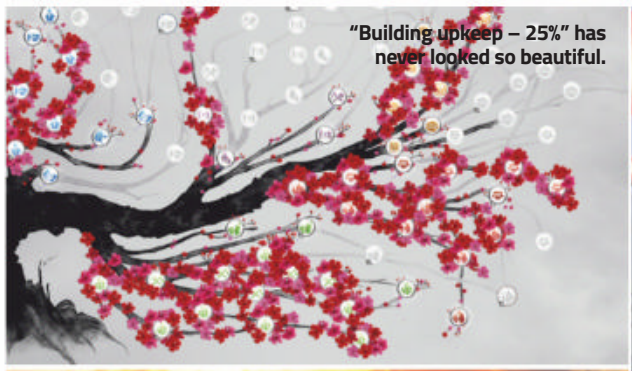
WHICH WARLORD? SOME OF YOUR OPTIONS

GONGSUN ZAN
Militaristic. Unfortunate nickname: "The Iron Fist General".

ZHENG JIANG
Raised in poverty. Historically, may have been two separate people.

SUN JIAN
The heroic Tiger of Jiangdong. Beloved by all. Likely to be betrayed.

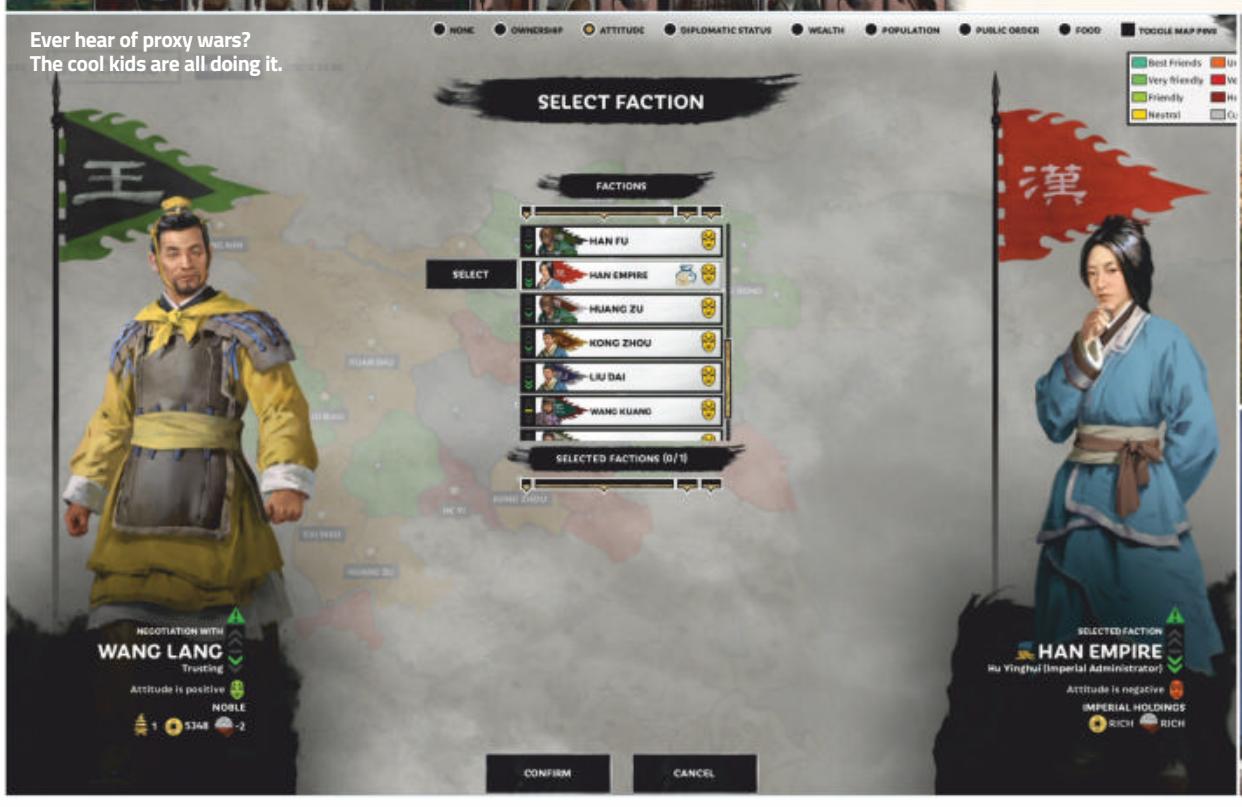
LIU BEI
Humble. Virtuous. Inspiring. Also quite likely to be betrayed.



"Building upkeep – 25%" has never looked so beautiful.

Are night battles for surprise or just because they look nice?

Pity the banner guy with no shield.



It's a complicated plan of attack.

of a campaign you choose an individual leader. Some of them are warlords with varying degrees of legitimacy to their attempt to take charge of China, some of them are straight-up bandits, and one of them is Dhong Zhuo, a tyrant who begins the campaign with the current child-Emperor as a hostage.

These very different characters can make for very different starts – Cao Cao, the suggested beginner's choice, feels more like traditional Total War in that you have a decent settlement, an army, and a neighbour to defeat so you can complete your first province (here called a commandery). Meanwhile, Liu Bei has an army full of legendary generals but no home and has to defeat an army of Yellow Turban rebels before settling anywhere.

Other parts of the turn-based campaign side of Three Kingdoms are less jolly. Population is important – a high rate of growth, from constructing the right buildings, can increase your armies' replenishment rate but also cause overpopulation, the main culprit of public disorder. Having too many people puts a strain on food supply.

Meanwhile, you want to keep constructing buildings that earn money and increase prestige (which is how you unlock higher ranks, fill out your court, and eventually declare yourself one of China's three kings).

I can't say working my way through upgrades of various buildings has ever been my favourite part of Total War and when you control something on the north side of 20 settlements managing all this construction can be a real bore.

On the upside each member of your court can be given an assignment, attaching them to a settlement and giving it some kind of bonus. You don't need to march them around the map to do this – like espionage it's just a menu. It feels like a way of keeping some of the things agents and heroes did in former games, but abstracted enough that they aren't an annoyance. It also keeps them off the map so it's free for actual armies to do their thing.

According to one point of view, all this stuff on the campaign map and its multitude of attached menus – I haven't even mentioned reforms, a tech tree mapped onto a picture of an actual tree where each improvement lights up a blossom of petals – is just scene-setting for the battles. And it's true that it gives them context that can make them feel different to the last one no matter how similar they actually are in play.

HISTORICAL BATTLES HISTORY IS ANOTHER WORD FOR SPOILERS

BATTLE OF RED CLIFFS
Cao Cao controls the north. Sun Quan and Zhuge Liang unite the south against him, hoping he will rely on his fleet of flammable boats.

CONQUEST IN JIANGDONG
After taking the Wu commandery Sun Ce convinces his uncle to join forces. Together they march on Wu Lang in the Qiantang estuary.

THE INVASION OF JING PROVINCE
Sun Quan, after lending control of Jing Province to Liu Bei, turns against him.

> "Of course there's none of the madness of the Warhammer games; there aren't hydras breathing fire or giants swinging tree trunks around..."

I enjoy the campaign for its own sake though, even if it can occasionally be too mathematical for its own good. For an example of that look no further than the way it takes an important theme of Romance of the Three Kingdoms like corruption, personified by traitorous eunuchs who nepotistically manipulate their friends into positions they don't deserve while the country falls apart.

THE POINTY END

The real-time battles are more immediately exciting than the numbers game. Units with crossbows chunter out steady volley after volley of bolts, horseriders form up into wedges at the last minute and charge, infantry lock down their shields and absorb damage. Formations are back and there are plenty of them, though it's not always easy to get access to them. There are multiple classes of general to choose from and strategists, while weaker, are necessary because they learn formations as they level up.

Some followers have access to them as well, so assigning a herdsman to the general with a cavalry retinue means they'll know the wedge formation.

An army can have three generals, each with a retinue of up to six units. This lends itself to balanced armies with one general for cavalry, one for infantry, and one for archers and catapults. Which is not to say you can't make unbalanced or hyper-specialised armies, it just feels wrong. Generals have personalities that suit their roles, expressed as they banter with each other during battles. They even gain traits and develop rivalries and friendships with each other the longer they spend together. You want to build them and arm them like party members in an RPG.

While generals have attack animations right out of kung-fu movies, when ordinary soldiers collide there's a lot of milling around and swiping at the air going on. Of course there's none of the over-the-top madness of the Warhammer games because there aren't hydras breathing fire or giants swinging tree trunks around, but there's also none of the individual clashes that made Shogun 2 so much fun to watch.

BATTLEFIELD BULLY

Anticlimax is a problem with Three Kingdoms more generally. At a certain point in the campaign the three leading warlords are declared kings and have to fight it out to determine who will be sole emperor. Plenty of my criticisms – an underwhelming endgame, or clunky battle animations, or AI oddness – have been true of other Total War games. Three Kingdoms is no worse than many of them and better than quite a few. It's easily in my top five games in the series.

I look forward to seeing how things like the diplomacy system and maybe duels carry on into Warhammer 3 and what comes next, it's just hard to look past Three Kingdoms' role as an iteration on a formula rather than a game in itself.

Three Kingdoms is a very good strategy game for when you want to experience 2nd century China, and I've spent dozens of enjoyable hours with it. When you zoom in close on the right details, whether two generals duelling or an enemy turning the vassal system against you, it's grand.

JODY MACGREGOR PC

VERDICT:

This ranks as my fourth or maybe fifth favourite Total War game, which is still a good thing to be.

8

Anno 1800

A compelling, if somewhat idiosyncratic city-builder.

DEVELOPER BLUE BYTE • **PUBLISHER** UBISOFT
www.ubisoft.com/en-gb/game/anno-1800

This is comfortably the most engrossing city-builder I've played since Cities: Skylines, one that combines an intriguing theme with some enjoyably complex production chains and trading mechanics. It also has a wealth of buildings to construct and resources to produce, letting you construct some truly impressive and enormous urban sprawls.

Anno 1800 puts you in the hobnailed boots of an up-and-coming business magnate in the burning heart of the industrial revolution. There are three ways to play, Campaign, Sandbox, and Multiplayer. Structurally, they're all basically the same—the campaign is itself a gigantic sandbox that happens to feature a chain of missions to follow.

CLASS WARFARE

In its early stages, Anno 1800 is a straight-up city-builder. Progress in Anno is predicated upon two things—population growth and meeting the needs and wants of your citizens. Each "class" of person has a different set of requirements that you need to meet. Farmers, for example, simply require clothes and fish to subsist. But to make them happy, you need to ply them with alcohol (just like real life!). You'll need acres of potato fields that can be distilled into schnapps, while also ensuring all farmsteads are within staggering distance of a tavern.

The better you meet those needs, the more people will fill the houses of your village. Once a farmhouse reaches its maximum population, it can then be upgraded to house the next class of citizen—workers.

This unlocks the next evolutionary stage of your settlement, letting you construct more advanced buildings like brickworks and breweries.

However, workers are considerably more particular in their needs and wants, going so far as to demand soap, the fops! And so it goes...

This is where Anno 1800's "blink and it's 2am" qualities start to reveal themselves. Once you unlock the third tier of citizen, Artisans, you'll need an infrastructure capable of supporting the production of sewing machines, fur coats, and rum. The latter of these, of course, requires raw materials that don't grow in a European climate. So to acquire these, you need to build ships and send them to explore the New World.

The New World is represented on an entirely different map, and has unique citizen types, production chains, and resources. This effectively means a game of Anno 1800 plays out on two unique RTS maps at once, which has all sorts of tactical considerations if you're playing in multiplayer. You could be the king of steel in the Old World, only to find your economy collapsing because someone in the New World stole an island that produces all your cotton.

Either way, you'll need to set up trade routes to get these exotic goods to your increasingly needy (and populous) citizenry. It's worth noting at this point that both sides of Anno's city-construction are wonderful to watch in motion.

> "You'll need acres of potato fields that can be distilled into schnapps"

WHY SHOULD I CARE?

+ You like rum an awful lot

+ You've always wanted to see the New World

+ Complex synergies make you feel all faint.

BEER BARON

As your production chains expand and the desires of your people grow, the strategic side of Anno 1800 begins to show its teeth. At one point I discovered my starting island couldn't produce beer, as the soil wasn't fertile for growing hops. My people quietly informed me of this by staging a massive riot that obliterated my production and almost cost me my game. Needless to say, I promptly colonized a nearby island and set up a second settlement dedicated almost entirely to the production of beer, then organized a trade route to transport this vitally important resource on to the mainland.

The way all Anno's systems interlock is impressive. If you're struggling to create a resource yourself, then you can purchase it via your trading post. Yet doing this puts you at the behest of other players (or the AI if you're playing singleplayer). At the same time, you can sell surplus produce from your settlements for profit. But even a burgeoning economy isn't a guarantee of success. You still need to be able to either create or acquire the right resources to push your city deeper into the technological age.

In its later stages Anno becomes a blend of industrial-scale plate-spinning with some broad-strokes RTS thrown in. As competition for resources becomes fiercer, you may need to wrest control of islands from your opponents.

For the most part, I think Anno's core systems are elegantly balanced. At times it can make you feel stretched, especially if multiple random events like fires happen at once. Even when I had to pause a new project to upgrade a bunch of houses or relocate a low-level farm, however, I never felt bogged down in micromanagement.

By far Anno 1800's biggest issue, however, is the appalling and incessant yammering of its AI players. Anno 1800's story campaign features a cast of characters that are fully written and voiced. I really wish it didn't. The acting is hammier than a Doctor Who Christmas special, particularly that of your in-game nemesis Edvard Goode, who would twirl his moustache right off his face if he actually sported one.

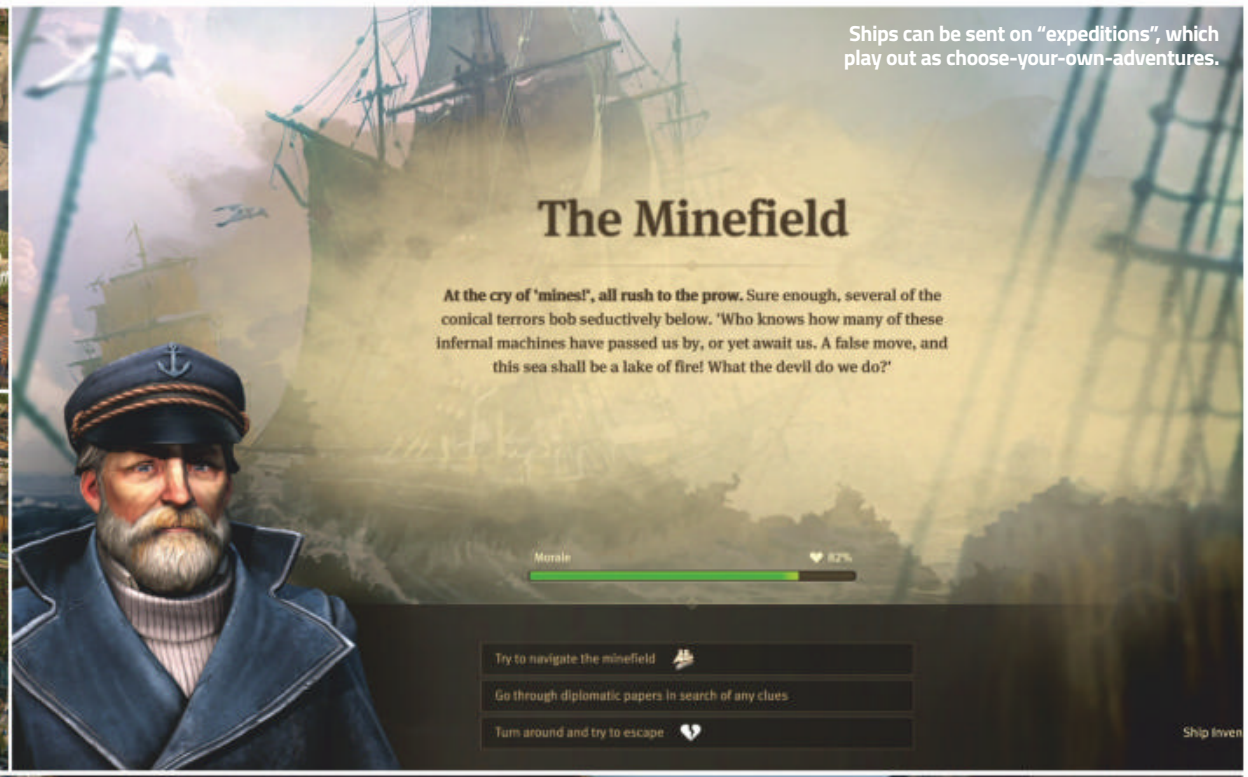
Script carbuncles aside, Anno 1800 is a rich and sumptuous city-builder, easily the grandest and deepest Anno to date. Its early game is a wonderfully relaxing experience, while the later stages will have you scratching your mutton-chops and happily stretching your braces in equal measure.

RICK LANE PC

VERDICT:

Despite an annoying story mode, Anno 1800 is the biggest and best entry in the series to date.

8


Ships can be sent on "expeditions", which play out as choose-your-own-adventures.
The Minefield
At the cry of 'mines!', all rush to the prow. Sure enough, several of the conical terrors bob seductively below. 'Who knows how many of these infernal machines have passed us by, or yet await us. A false move, and this sea shall be a lake of fire! What the devil do we do?'
Morale
Try to navigate the minefield
Go through diplomatic papers in search of any clues
Turn around and try to escape

Ship combat is standard RTS fare. Whoever has the most/ biggest ships wins.
Ditchwater
Quaint Port Town
Ave Maria
Clipper
Property of
Sir Archibald Blake
All Ships
Idle Ships
On Trade Routes
On Patrol
Escorting
In Transit

My rum-distillery exploded, but its spirit lives on.

BOXING
WELCOME
BOXING ARENA

Steel Division 2

An RTS for discerning armchair generals

DEVELOPER EUGEN SYSTEMS • **PUBLISHER** IN-HOUSE
www.steeldivision2.com

A grandiose rendering of World War II's Eastern Front, Steel Division 2 details Operation Bagration, the Red Army's back-breaking push against the Nazi war machine. It's an ambitious real-time strategy game, and though it ultimately fails to live up to a lot of that ambition – especially with its singleplayer campaign – the vastness of its battles captures the scale of total war with lavish detail.

Tactical battles are the heart of the game, real-time conflicts pitting dozens of units against each other in conflicts that feel real. Battles with ten players on each team, each commanding a couple dozen units, feature prominently in online play and take place on a map so big you couldn't hope to support your furthest ally if you wanted to. It's warfare at a scale that inspires awe when you watch a replay.

TAKE COMMAND

Steel Division 2 pushes realism as far as it can be pushed in the genre and still remain fun – a tank's main gun can fire massive distances, up to 2,000 metres, and even that kind of range doesn't scratch the width of a map. A multiple-rocket artillery piece can take minutes to reload. Infantry can fight for so long in urban warfare that they run completely dry of their thousands of rounds of ammunition, requiring you to bring in supply trucks with the next wave of reinforcements. SD2's tactical play forces you to care about details like force composition and deployment speed and how terrain affects the battlefield. Not in boring, simple ways like light cover or heavy cover, but on a human scale that shapes the world your units move in. Two kilometres is a huge distance to ask your soldiers to charge on foot with people shooting at them. It's not a huge distance for the tank gun taking aim at your men.

Matches are won or lost on the frontline of combat, a coloured line overlaying the field that pushes and pulls as units move. It's satisfying to shift, forming dynamic pockets and bulges and salients. New to SD2 are capture points, so battles are won by taking notable terrain features: hilltops, bridges, towns, roads. It's a marked improvement from the simple percentage of map control in Normandy 44. Interacting with that terrain is simple. The game's built-in range and line of sight checking tool is well made – it's hotkeyed to C – and sliding across the terrain to reveal high ground for overwatch or sheltered dells to advance along is a joy. Battles take place over three phases, A, B, and C, each of which escalates the fight, introduces new units, and changes your income of points to call in those units with.

All of this is quite complex. There are systems for suppression, morale, armour penetration, resupply, repair, surrenders, shock, air combat, cover, and transports, and that isn't an exhaustive list. In an unforgivable sin, there is neither tutorial nor manual to help you learn the basics of the game. The UI is also woefully unequipped to direct you. How much fuel does this particular plane have left? Who are my soldiers shooting at? These are not things it will tell you at a glance.

> "It's warfare at a scale that inspires awe when you watch a replay."

One would hope that this fidelity would apply to Army General, the much-hyped singleplayer campaign that scraps Normandy 44's scripted scenarios for a full-on strategic wargame. The sprawling Army General maps are a war table hundreds of kilometres square, each recreating a particular section of Operation Bagration. You're given basic objectives and a historical layout of battalions to move about in turn-based rounds with your opponent. When you clash, you bring some of those battalions into SD2 skirmishes. This sounds excellent, a partnership of real-time tactics and turn-based strategy. It is anything but.

INFURIATING INTERFACE

Army General suffers from a frustrating, terrible interface and poorly-explained, poorly-suited mechanics. Notably, it does have a manual, but one so vague as to be unhelpful. Units are moved around the map and attack via an action points system, but that system can be baffling to understand because it's married to real-world measurements in kilometres and an invisible grid overlay, with no indication as to why a battalion can't attack enemies or why it's moving so slowly even though you're sure it's on that road and not in the adjacent swamp.

The Army General mechanics even manage to throw off the tactical battles. Deployment phases are thrown out the window in favour of phases based on the position of the battalions on the map. So sometimes you're stuck with no tanks, or no infantry, for half a fight. It's a bizarre choice for a game that otherwise prides itself on realism. Why would the recon group charge the German bunker line rather than wait 20 minutes for the tanks to show up?

Despite the campaign's shortcomings, the multiplayer and skirmish warfare are still excellent. They feature some great innovations on Normandy 44. Command networks let you link your leaders with a high-ranking officer for greater bonuses to those under their command.

Steel Division 2 is a good game buried under layers of frustrating obfuscation and burdened with a poor singleplayer experience. Every time I was close to getting fully immersed, the game reared up a new, ugly problem.
JONATHAN BOLDING PC

WHY SHOULD I CARE?

+ You want to punch nazis

+ The Red Flag is your personal theme song

+ You think quantity has a quality all its own.

VERDICT:
Weighed down by a terrible campaign, this is still a superb multiplayer WWII tactical RTS.

6

A Flak 88mm in a dominant position on this plateau.

F1 2019

With scripted drama and F2 racing, F1 2019 spins the wheel.

DEVELOPER CODEMASTERS • **PUBLISHER** IN-HOUSE
www.codemasters.com/game/f1-2019

It seems obvious now in retrospect. The best way for an annualised, licensed motorsport game to stay fresh every summer when the latest iteration trots out onto the Steam Store is, clearly, to chuck in an entirely different racing series as well. With the inclusion of the 2018 F2 championship, F1 2019 feels for the first time in the series like a wider world of motorsport, offering that irresistible rags-to-riches journey in career mode and a handling model all of its own to master.

It makes a lot of sense. Codemasters has had the handling down for years now, twitchy and frightening, and giving just the right amount of rumble in your hands as you wrestle your car implausibly fast over an impeccably rendered apex. It needed to add something more than a few handling tweaks, and it did just that by placing a tier of racing below F1 and thus making a contract with the big boys feel like more of a big break.

The way it's brandished in F1 2019's career mode is a bit of a surprise, though. Rather than a full season of F2 racing, it's a scripted sequence of condensed race highlights akin to Codemasters' beloved TOCA: Race Driver which kicks off your journey to F1.

Fictionalised drivers Lukas Weber and Devon Butler mix with familiar names like Russell, Norris and Ghiotto, and the former are very much cut from the 'broadly drawn racing stereotype' cloth.

Cocksure English villain with waggly eyebrows: step forward, Devon. Bavarian stickler for rules and procedure: take a bow, Mr Weber.

That's not necessarily to the detriment of this potted F2 season matinee. What is, however, is the fact it's over so quickly. Barely half an hour passes before you're spat out of the other side of F2 and picking an F1 team. It's possible to participate in a separate F2 season mode – which has no bearing on your career – but it would have been nice to have the option of working a bit harder for your F1 race seat.

When you graduate to the big cars, the career mode format takes on a familiar complexion from last year's game. It's once again gratifying to earn the trust of your team by hitting their performance targets, and gain increasing access to its RPG-like upgrade tree for car development, spending upgrade points to allocate to particular areas. My Williams was in dire need of aero upgrades in my debut season for example, whereas the Renault-powered teams need to find engine performance to bridge the gap to Mercedes – impressively granular detail.

But there's a twist in the tale – Lukas Weber and Devon Butler graduate to F1 along with you, replacing two real drivers and popping up in cutscenes which amp up the sense of rivalry (and, to be honest, am-dram theatre).

You get used to that ungainly halo surprisingly quickly in first-person mode.

WHY SHOULD I CARE?

+ Too much F1 is never enough

+ You have a racing chair beggin to be used

+ You want some good old-fashioned rivalry in your racing.

ON THE PODIUM

A new leagues system and improved race highlights mode both bolster F1 2019's esports cred, which is good news for pro sim racers and those aspiring to be the next Brendon Leigh alike. I'm still not totally sold on the virtual stewards and how they dole out penalties, but I've yet to play a racing sim online that has cracked that particular nut agreeably.
PHIL IWANIUK PC

LOUD AND PROUD **DELIGHTFULLY OBNOXIOUS MULTIPLAYER LIVERIES**

CNH2N+2ENERGY – TIGER
Pretty sure there's a magic eye hidden on this one, but it hurts too much to look at.

DISTORT – INTERFERENCE
There's a reason this kind of camo doesn't appear in nature – animals have better taste.

OVOLO – FLUID DYNAMICS
"Can you make it any greener? What if you painted a greener green on top of the green?"

VENUS – STRIPE WIPE
The driveable manifestation of a printer jam, yours to own and compete in.

VERDICT:

Goes beyond what anyone could expect of an annualised series, retaining immaculate handling and visuals.

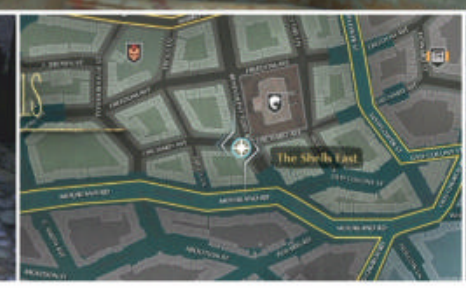
9

The Sinking City

A detective game with a Lovecraftian twist.

DEVELOPER FROGWARES • **PUBLISHER** BIGBEN INTERACTIVE
www.thesinkingcity.com

The cops will turn on you if you fire your gun in public.



Plagued by nightmarish visions of a drowned city and a colossal tentacled beast, private detective Charles Reed travels to the town of Oakmont to find answers. Storms have been battering this once thriving fishing community, cutting it off from the mainland, flooding parts of it, and leaving the rest sodden and dilapidated. And to make matters worse, the locals are deeply suspicious of outsiders. But with the source of these harrowing visions lurking somewhere in the city, Reed has no choice but to get his feet wet.

The Sinking City is a third-person detective adventure set in a fictional version of 1920s New England, inspired by the works of influential (and, yes, controversial) horror writer H.P. Lovecraft. Divers uncover an ancient cavern hidden beneath Oakmont filled with otherworldly statues of cosmic demons, and are driven mad by the discovery – a madness that begins to spread through the city and awakens strange, violent creatures the locals call wylebeasts. The game is divided between solving crimes and shooting monsters, but the gulf in quality between each flavour of play is pretty wide.

Ukrainian developer Frogwares has been making Sherlock Holmes games for over a decade now, including 2014's magnificent Crimes & Punishments. As such, The Sinking City is a decent detective game – particularly in its use of the blatantly Sherlock-inspired Mind Palace system. As you explore a crime scene you collect clues that, while useless on their own, can be connected in the Mind Palace to open up new lines of investigation. And you have to make these connections yourself, without any hand-holding or hints, which makes a successful deduction very satisfying.

But while Sherlock Holmes has to rely entirely on his intelligence and intuition to solve a mystery, Reed has a supernatural advantage. In certain locations a glowing blue portal will open up, through which he can witness whichever crime transpired there. These vignettes come in the form of shimmering silhouettes of the people involved and fragments of speech. Reed must then construct a narrative, figuring out the order these echoes of the past occurred in, which will usually result in a new clue appearing in the Mind Palace.

My biggest issue with The Sinking City, at least as a detective game, is that the cases aren't that interesting. One of the greatest strengths of Frogwares' Sherlock games is encountering a confounding mystery – say, a murder occurring in a room locked from the inside – and being overcome with a desire to solve it. But I rarely felt that compulsion here, and the solutions to many of the cases lacked a satisfying 'aha!' moment – the punchline that should round off any good detective story. In leaving Holmes behind, the developer's knack for writing a solid mystery seems to have suffered.

Reed is also a charmless protagonist, with none of Holmes' wit, quirks, or nuance. He's the worst kind of grim, gravel-voiced private dick stereotype.

SHOT IN THE DARK

As for the over-the-shoulder gun combat, it's perfectly functional, but feels like a box being ticked rather than a vital part of the game. Bullets being Oakmont's primary form of currency (it's a long story) adds an interesting element of ammo conservation to each wylebeast encounter. But mostly I was just eager for the shooting to stop so I could resume being a detective. There's a simple crafting system in there too, letting you make health kits, ammo, and other useful items from scrap gathered in the world. But, like the combat, this is all rather rote.

The Sinking City's dreary setting is also hard to love. It's an open world game, letting you freely explore the streets of Oakmont. And while I love having to follow directions and pay attention to street names to find important locations, this bleak, muddy, perpetually rain-soaked city is a thoroughly depressing space to exist in. There's a good, but not great, detective game lurking here, but as a package, it doesn't quite work. *ANDY KELLY* PC

WHY SHOULD I CARE?

+ You still love Lovecraft

+ Rising sea levels plus monsters is your jam

+ The stars are right.

VERDICT:

An occasionally entertaining detective game blighted by poor writing, rote combat, and a dreary open world.

6

Bloodstained: Ritual Of The Night

Koji Igarashi created a homage to his own games.

DEVELOPER ARTPLAY/INTI CREATES/WAYFORWARD • **PUBLISHER** 505 GAMES
www. 505games.com

Bloodstained frequently produces some really amazing backgrounds.

Five years ago Koji Igarashi, director and writer on Castlevania: Symphony of the Night, left Konami to make another Castlevania-style game. Five years is a long time, and the Metroidvania genre has grown substantially in that period, but sometimes you don't want a variation on a familiar theme. You want the same game in a new package. Rejoice, because with Bloodstained: Ritual of the Night, that's exactly what you're getting.

Miriam is a science experiment in the shape of a dolled-up anime girl. Together with her friend, a man named Gebel, she was part of an experiment that transplanted the essence of demons into her body. This demonic power comes in the form of shards, thus she's called a Shardbinder. The more shards you absorb the more you let go of your humanity, a fate that befell Gebel.

Gebel is now out to fill the world with demons, all from the comfort of his castle – because of course there is a castle. It's a sprawling place full of heavy chandeliers, grim-looking statues and monsters keeping watch. From the entrance hall to the gardens, towers and even the caves below, every inch of this castle is waiting to be explored and plundered, and for the most part its backdrops are varied enough to make you want to see what's around the next corner.

Combat is the main focus, and on normal difficulty most enemies don't pose much of a threat. Early on a nice rhythm between exploration and combat builds, and feels very genre-specific in the way you anticipate the respawning enemies and find increasingly fun, increasingly quick ways to deal with them. To this end you regularly find new weapons to try out on an unsuspecting demon's hide. Each weapon has a different range and animation, which are important aspects in sequence breaking smaller enemies and getting hits in with bosses. Compared to the rest of the game, the boss fights present a tough challenge, but as so often with Metroidvanias, at one point it clicks and careful study of attack timings and/or a bit of luck pays off. It's satisfying every time.

There's no way to attack up or downwards, which is the ultimate proof Bloodstained was designed as a throwback experience. Your bursting inventory doesn't win points for usefulness as much as it simply appeals to the part of our brains that wants to collect all the things. That's also the only reason for crafting meals for tiny stat buffs in the village or for visiting the castle's demon barber who lets you switch outfits – as if you're browsing a shopping mall rather than a house of horrors. Finding your way around can stump you sometimes, but backtracking is made easy through genre-typical fast travel rooms.

There is a point to be made for Metroidvanias that aren't tough as nails these days, which is why Bloodstained is likely to appeal to newcomers. But, like the vampires it so reveres, it's starting to feel long in the tooth when compared to the innovation found elsewhere in the genre. It's a neat little time capsule of a game, an amusing diversion with a flow that makes time flow swiftly until you're brickwalled by a boss. Sometimes that's all you want. *MALINDY HETFELD* PC

WHY SHOULD I CARE?

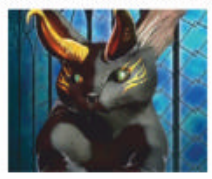
+ You want to suck some blood?

+ Any metroidvania is a GOOD metroidvania

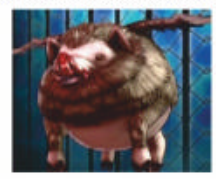
+ You backed the Kickstarter.

PET SHOP OF HORRORS **SOME STANDOUT MONSTERS**

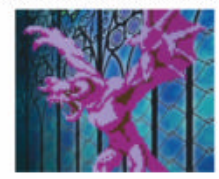
TAMAKO-DEATH
This is likely a joke on a co-worker. He rocks hard and drops strawberries.



KAMIKAZE
One of multiple cat demons, but this one has the funkiest makeup.



PLUME PARMA
The floating pig deserves an award for the name alone.



EIGHT BIT OVERLORD
An homage, this enemy was inspired by Dracula's final form in *Castlevania*.

VERDICT:

Bloodstained is a feast for fans of a very specific experience; but too old-fashioned for anyone else.

7

My Friend Pedro

A banana teaches you to kill.

DEVELOPER DEADTOAST • **PUBLISHER** DEVOLVER
www.devolverdigital.com/games/my-friend-pedro

The gamers running at me have swords, because all gamers own swords, I guess. They also have Monty Python Dark Souls cosplay armour but it can't save them from the shotgun blasts that reduce them to lumps at my feet. I'm out of ammo before I'm out of gamers, the last one charging with sword held high. But any object you kick is a one-shot kill in this game, and dead gamer lumps are kickable objects.

There are more impressive gun-fu stunts in My Friend Pedro than breaking somebody's neck by kicking their dead friend's torso at them, but this moment of improvisation is typical of what happens between gif-able highlights. Once or twice per level I'll do something absurd like skateboarding through a window then kicking that skateboard at someone while shooting someone else, or throwing a frying pan into the air then ricocheting bullets off it to clear a room.

But the meat and potatoes of My Friend Pedro isn't these setpieces. It's jumping in and relying on the combination of a generous slow-mo meter, physics objects, and a lot of bullets to see you through.

So many options.

BANANA DRAMA

I should mention the talking banana. His name is Pedro and he's full of potassium and advice on how to kill people, whether retired mafiosi or Christmas-themed bounty hunters or gamers driven to madness by violent videogames. There's a story in My Friend Pedro but a minimal one – it feels like the plot of another hyperviolent Devolver game, Ruiner, only told on fast-forward. Pedro is there to explain things, but more importantly he appears in the corner of the screen when you pull off a high-scoring combo and tells you what rank you got at the end of a level.

It's a score-attack game, with bonus points for chaining together kills in combos. There are leaderboards, and I have replayed several levels just to get a higher rank on them. Chasing high scores makes me look ahead at a level and think things like, "I should ride the barrel onto that guy then jump off while dual-wielding and split my fire so I can shoot that one and the other before I land."

Split-fire looked neat in the gifs Pedro's designer showed off during development, but I was worried it would feel rough in play. I was super wrong. It's easy – right-click on one dude and hold to lock him in, and then for every left-click shot, no matter where it's aimed, the right-click guy gets a bullet as well. Levels that drop you down shafts with enemies on both sides, or have doors full of goons opening around you, are built for this. I never stopped enjoying it.

These are also fine moments for dodging by pressing W, which sends you into a bulletproof pirouette. Shooting while dodging sends bullets flying in whichever direction your guns happen to be pointing during that part of the animation, wild sprays flying around as you whirl about like a dog in a tumble dryer. Again, enjoyable.

> "He's full of potassium and advice on how to kill people."

WHY SHOULD I CARE?

+ You love bananas

+ You love a good twin-stick

+ Carnage is your middle name.

COMBO BREAKER

Later levels reduce the amount of physics objects like skateboards, basketballs, and knives, as well as goons to fling them at, in favour of mines, lasers, spinning platforms, and traps that require more perfectionist play. There's not as much freedom to rack up combos and a lot more falling. They're less fun to replay, but before long there's always a refresher level that plays like something completely different, a motorbike chase or a freefall or a boss fight.

Along with the score, at the end of every level Pedro gives you a gif of a highlight to save or share. Postcards from murderland, they slice My Friend Pedro into a handful of enjoyable seconds.

Unlike Superhot or Max Payne I never got tired of it, thanks to short levels, high variety, and a storyline that's purest nonsense. *JOE DONNELLY* PC

VERDICT:
Barrel through the story once for a laugh, then replay the best levels until you are John Wick on a skateboard.

8

Amid Evil

There's a lot of evil in Amid Evil, but don't worry, because you can use planets as grenades.

DEVELOPER MODE 7 GAMES • **PUBLISHER** IN-HOUSE
www.frozensynapse2.com

Amid Evil's worst weapon is a staff that shoots blue homing blobs – pathetic water balloons that splash against low-poly demons, many of whom look like what you'd get if you coated a bunch of triangles with super glue and threw them in a dryer. I don't like it or the moments when I resort to it, but I can also use the entire Earth as a grenade, which more than evens things out. Amid Evil is good.

It's a throwback FPS like Dusk, but rather than the hitscan headshots, Amid Evil recalls Heretic and Hexen's magical weapons. The staff sucks, but there's also a magic sword, a grenade launcher that shrinks and fires planets (like the Earth), a spike-firing morningstar, a lightning trident, plus your axe and a geometrically-unreasonable purple thing that clears rooms like Doom's BFG.

Most of the weapons are fun, but the Star of Torment, which pins enemies to walls like FEAR's stake gun, or can be used to homer them out of the level entirely like they've been slapped by a god, is Amid Evil's pièce de résistance – I never tire of it.

Part of Amid Evil's appeal is that it ignores certain annoying, speed-hindering FPS conventions scaffolded onto shooters since the late '90s. There's no fall damage. You can breathe underwater. Elevators won't crush you if they catch your shoulder on the way down. They'll just clip through you as they should. Accidental deaths have their place in games, especially when they're comedic, but here they'd only get in the way of the fun, and the speed. They aren't missed.

Amid Evil falls prey to other genre foibles, though. Getting out of water is a pain in the ass. And then there's the platforming, and you probably already know the type. Here's a game about running very fast all the time because there's a mob of demons chasing you, so how about you climb spiralling, ultra-narrow balance beams and leap between platforms that disappear on a timer?

Also slowing things down are the gods' architectural designs. You're the latest mortal champion taking a stab at cleaning up their evil-infested lands, and except for the boss stages, every level is a button hunt. Body-check one of the big blue switches, and something about the level changes: an elevator activates, a door opens, the water level rises. And then you go find the next button to walk face-first into until you eventually find a key to open up the next big area, just like in the classics.

Fights can become a mess of ugly triangle men quickly.

> The Star of Torment fires clumps of homing crystals.

WHY SHOULD I CARE?

+ Old school is best school

+ Magic trumps bullets

+ You hate the Gods.

SOUL SACRIFICE

That's not really why I liked the classics. I love Amid Evil's big open levels – the way some of them fit together, especially the one made of moving gears – and they're full of secret areas to discover. But kicking around demon guts as I retrace my steps to try to figure out which damn pathway the last button opened up isn't as fun as pinning demons to walls with the Star of Torment, which is very fun. When I'm just tearing through evil knights and stone giants and weird heads with flamethrower mouths, and I'm more kite than man, Amid Evil shines like the best of Quake and Serious Sam.

Slain enemies drop souls, and if you fill a meter with them, you can activate Soul Mode, which turns all of your weapons into fire hoses of death. The Star of Torment fires clumps of homing crystals that one-hit just about anything and explode outward on contact to clean up nearby grunts. Whisper's Edge fires bigger waves that always pierce enemies and bounce off walls. The BFG-like Aeturnum, which often saved my ass when I needed to vaporise a room without a real fight, fires black holes.

Despite barely telling a story, Amid Evil made me wonder if the gods might be the real assholes – they were the ones who put buttons everywhere, after all – and when it was over I lingered for a long time before letting it end. I want more. *TYLER WILDE* PC

VERDICT:
Amid Evil is a fast, stylish throwback that's at its best when the screen is full of enemies.

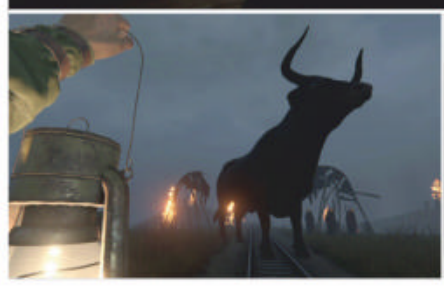
8

Pathologic 2

The grim reaper reigns supreme in the glum streets.

DEVELOPER MODE 7 GAMES • **PUBLISHER** IN-HOUSE
www.frozensynapse2.com

Mimes offer insights into characters' private thoughts.



After years away you have returned home to your village in response to an urgent letter from your father. Three men try to kill you the moment you step off the train. The town instantly knows about this and blames you for some other recent murders. To top it all off you're also quickly dying of hunger, thirst, exhaustion, and blood loss. That's just day one in this strange, gruelling survival game.

Pathologic 2 is "supposed to be almost unbearable" according to devs Ice Pick Lodge, who created the obtuse, near-unplayable original Pathologic, and purgatorial horror game The Void. Pathologic 2 challenges you to survive 12 in-game days in a town that's going completely to shit. Disease, paranoia, mob justice, and paranormal happenings unfold in real time as you plod through brown, foggy districts, invading people's houses for scraps and occasionally meeting important figures – a mob boss, a childhood friend, faction leaders for bands of roaming children.

It's a deliberately exhausting experience. An egg is not just an egg in Pathologic, it's an "empty illusion of possible life". You need to scoff many empty illusions of possible life to keep your hunger bar from maxing out and eventually killing you. Wells spread through the town help you quench your thirst regularly, but disease and exhaustion are persistent factors you have to manage all the time. The town has a detailed barter economy, and I eventually started to find semi-reliable ways to source food from kid gangs (they love sharp objects so hoard those scissors), but the survival elements have been harshly tuned. You're going to die, at which point the dandy of fate will curse you permanent ailments like a health or hunger debuff.

The survival systems constantly get in the way of a fascinating mystery game. When you chat to key figures in the town, they drop motes of information that form a growing web in your journal. Empty nodes imply there's more to explore in a given line of enquiry. It's a great way to keep track of the abundance of leads you collect from day to day. There are so many threads I wanted to tug at. What happened to my father? What's inside the floating tower where half the town's children have gone to live? Who, or what, is locked inside the abattoir?

It manages to be quite an atmospheric game, even in spite of rigid character models, static faces, sparse and repetitive interiors, and an extremely clumsy first-person combat system. The game is always pushing back against your attempts to explore, but there are delightfully macabre ideas hiding away in corners of the town, like gurgling tree roots that drink blood and give you herbs in return. As a surgeon, you can extract organs from any corpse and then sell them to a particular buyer for food and medicine. These opportunities open up organically during a day/night cycle that also serves as a doomsday clock pushing the town closer to disaster.

It's a slog, and that's the point of it. The suffering of your character and the townspeople is reflected in the torment of ever-hungry survival bars that drive you to theft and murder. One character talks about how her client asked her to design the town's layout to be deliberately confusing and annoying, in order to stretch people like a spring so that, in a position of distress, they might discover deeper wells of creativity.

WHY SHOULD I CARE?

+ You hate joy

+ You hate yourself

+ But you do like eggs.

NO FUN ALLOWED

The speech has the ring of authorial self-insert, but I haven't experienced enlightenment yet, only annoyance. Health bar management is a tedious admin task that communicates nothing in the way of true suffering or even discomfort – the dissonant sound design does a much better job of this. Though I admire the way the game keenly rejects the idea that games should always be satisfying fun factories, I just don't see the worth in wrapping a good mystery in layers of irritant. The devs are planning to add difficulty options that should make the game a bit less crushing. Until then put off that spooky train ride home unless you're sure you'll enjoy Ice Pick Lodge's original vision for the game.
TOM SENIOR PC

VERDICT:
A gruelling mystery game that smothers its big ideas with incredibly dour survival mechanics.

6

A Plague Tale: Innocence

Face the devastation of 14th century France.

DEVELOPER ASOBO STUDIO • **PUBLISHER** FOCUS INTERACTIVE
www.aplaguetale.com

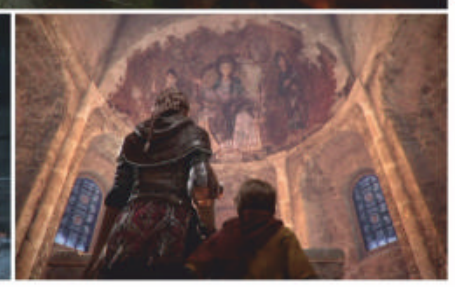
On a lovely afternoon in autumn, Amicia De Rune is out on a hunt with her father and the family dog, a scene so warm and tranquil you just know things are going to go very wrong very soon. That doesn't make it any less shocking when Amicia suddenly comes face to face with the Plague, which manifests itself not only as a horrible disease, but as a teeming mass of rats that devours everything in its wake.

Amicia and her father make their way home, only to find the Inquisition at their doorstep. For reasons unknown they want Amicia's little brother Hugo and are not above slaughtering their way through to him. Due to an illness, the small Hugo's lived a completely sheltered life and is basically a stranger to his sister, but in the face of death it's her task to protect him at all costs.

It's an effective introduction to your tools and responsibilities. As Amicia you keep Hugo close during sneaking passages, not letting go of his hand unless absolutely necessary and shielding him from the most gruesome sights. If there's climbing to be done, Hugo goes up and over first, and he helps open new passages by squeezing through openings his sister won't fit. Amicia's sling is a multipurpose item that can be used to distract soldiers by throwing stones at nearby metal items or destroy simple fastenings of drawbridges and the like.

Soon the children make it to a small town. It's here that not only the Plague's full extent becomes obvious, but also how woefully under-prepared Amicia is to take care of a child she hardly knows and who's fussing about wanting to return home. Hugo's disobedience is an absolutely realistic source of frustration throughout the game, and a lot of Amicia's character growth comes from how she handles it.

A Plague Tale's varied environments are filled with beautiful details.



WHY SHOULD I CARE?

+ The Middle Ages are your favourite Age

+ You have a thing for rats

+ You don't mind a bit of gore.

Unfortunately your actions in A Plague Tale for the most part don't support the oppressive atmosphere the narrative builds, mostly because it's a game that isn't challenging to begin with, and only becomes easier. The first time you have to resort to violence, face a giant swarm of rats or even just see a pile of dead bodies all feel momentous, until all of these things turn into business as usual.

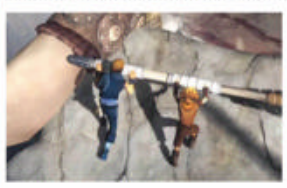
THE RATS

While your options grow, the number of enemy types doesn't, and towards the middle of the game you've seen and fought the same handful of soldiers slowly walking their predetermined routes so often that things feel repetitive rather than threatening. Rats too turn from a horrifying force to a mere annoyance as you gain more and more ways to work around them using light or tasty soldier corpses.

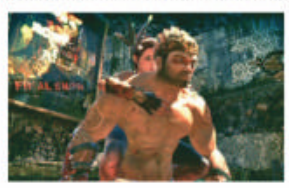
The amount of violence on display also poses a tonal problem – it's difficult to believe Amicia is truly haunted by what she's doing when's she's also dropping chandeliers on people's heads. The siblings and the friends they make along the way provide an interesting perspective, and their evolving relationship with each other is A Plague Tale's great draw, but the plot taking a bizarre turn towards the end makes for a botched landing at the last minute.

MALINDY HETFELD PC

GO IT TOGETHER OTHER GAMES FEATURING PROTAGONIST PAIRS

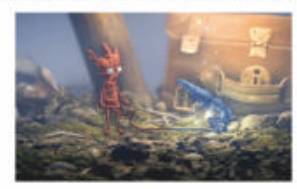


BROTHERS – A TALE OF TWO SONS
Melancholic fairytale in which you control two brothers to solve puzzles.



ENSLAVED: ODYSSEY TO THE WEST
Nothing bonds two people like one enslaving the other with a headband.

NEVER ALONE
This puzzle-platformer isn't only cute, it also teaches you about Iñupiaq culture.



UNRAVEL TWO
Travel a Scandinavian landscape as two sentient balls of yarn. Less weird than it sounds, honest!

VERDICT:

Beautiful and emotionally affecting, A Plague Tale nonetheless suffers from a lack of variety and tonal inconsistencies.

7

Void Bastards

Get bombarded by British jokes and annoying enemies in repeating corridors.

DEVELOPER BLUE MANCHU • **PUBLISHER** HUMBLE BUNDLE
www.voidbastards.com

The comic book-y art style is a real treat.

Ever since BioShock Infinite released and Irrational in its previous form went away, I've gladly played any games that offer a comparable experience. That is, a first-person shooter where you have more at your disposal than just cool guns. Void Bastards is described as a strategy shooter inspired by System Shock 2 and BioShock, and it features the talents of some former Irrational staff who previously made 2013's Card Hunter.

You are a prisoner, travelling across the galaxy to fulfil the whims of an HR computer that might eventually grant you your freedom. You get across the map with an FTL-style interface, and while most locations are enemy spaceships that you can board, loot and escape, there are also stores, asteroid ranges and deadly hazards to be aware of. Mostly, though, your time is spent navigating ships in first-person, looking for specific items to progress, then escaping before you're killed.

Your character has perks, both positive and negative, and if you die, you play as another criminal with different perks. Negative perks might be your character coughing every now and then, attracting enemy attention, or being more easily detected by security cameras and gun turrets. A positive perk might be better aim, or a higher chance of a critical shot. The ships are partly procedurally generated – the maps of the different vessels you'll board stay the same, but walls, enemy locations, obstacles and more will change each time. This means you can roughly learn where you're going on each ship, but that you can't really be certain of what you'll go up against.

While there is a stealth element to Void Bastards and you do have some silent weapons, it's mostly about shooting weird, British aliens in small corridors and rooms. The standard immersive sim elements are here: you can hack turrets to fight on your side, or shut down security from a terminal on the ship. You have a dart gun.

The crafting system in Void Bastards is excellent, and I say that as someone who usually loathes boring equivalent systems in other games. If you want to make something specific, a location tool in the game will tell you which ship on the map will grant you the parts to make it. Everything you craft is consistent between deaths, so the penalty for dying is usually just being further away from your main objective.

Here's the problem, though – I only intermittently enjoyed Void Bastards' actual combat. The tools are great, and often fun to use, but the enemy types are mostly a poor fit for what you have in your inventory. Some are deliberately overpowered and meant to be avoided.

THIEVES IN SPACE

It'll take around 12-15 hours to finish a single run, and even after doing that, you can carry on unlocking stuff and taking on harder enemies. I'm considering another run, even though I spent so long sighing at enemy barks, or getting shot at by inexplicably placed turrets, or getting too close to exploding enemies without realising it. There's just something very compelling about arriving on a new ship and finding that next thing you need that Void Bastards nails. *SAMUEL ROBERTS* PC

WHY SHOULD I CARE?

+ You love broad, British slang

+ You're an actual bastard

+ You're looking for unique visuals.

SHIP SHAKERS **MY FAVOURITE TOOLS IN VOID BASTARDS**

CLUSTERFLACK
Fires out a near-unreasonable amount of cluster bombs. Throw it, run away.

STAPLER
The version of the shotgun in *Void Bastards* fires staples, and it's a treat to use.

GERMSPIKER
Poisons an enemy, which slowly depletes their health, and can be used in stealth.

RIFTER
Manually teleport your enemies. They can't shoot while you're deciding where to put them.

UNSTABLE KITTY
Enemies will shoot at this, and when it's destroyed, it leaves a nice big explosion.

VERDICT:

A slightly messy first-person shooter elevated by some excellent weapons and a gorgeous art style.

7

Tech 277

YOUR GUIDE TO PC GAMING HARDWARE.

PC PowerPlay POWER AWARD

Our Power Award is given to products that are best in class no matter your budget.

PC PowerPlay SMART BUY

Our Smart Buy Award goes to products that balance performance with price tag.

GEAR THIS ISSUE

75 RAM BUYER'S GUIDE 84 ACER PREDATOR TRITON 85 RAZER CORE X 86 ASUS GT-AX11000 ROUTER 87 CREATIVE SOUND BLASTERX G6 90 OBJECTS IN SPACE: THE INTEL 386 PROCESSOR 92 MENAGERIE 94 HOTWARE

THE PCPP TESTBENCH

CPU INTEL I7 7700K ***intel.com.au***
MOBO ASUS Z270 ROG CROSSHAIR VI HERO ***asus.com.au***
RAM 2 X BALLISTIX 8GB DDR4-3200 ***crucial.com***
PSU CORSAIR 850W PSU ***corsair.com***
COOLING H105 CORSAIR COOLER ***www.corsair.com.au***

Memory buyer's guide

Chris Szewczyk takes a look at a range of DDR4-3200 memory kits and breaks down the things to look out for when shopping for a new kit.

When you're building a new PC, sometimes the memory can be almost an afterthought. Many buyers don't look beyond three key parameters: capacity, speed and price. These are obviously important, but there's more to it than that. Read on as we take a deeper look at some of the things you need to keep in mind when purchasing that shiny new kit of RAM. We've also got a roundup of kits from the biggest names in the market

HOW MUCH RAM DO YOU REALLY NEED?

This is an age old question frequently found on tech forums. As DRAM prices continue to fall in 2019, 16GB is becoming the standard amount being equipped in new systems. Laptops or lower end systems will be fine with 8GB for the most part if you're not doing anything too demanding. If you're using your PC for everyday tasks and gaming, 16GB is fine, but if you're one to have browser open with lots of tabs, productivity apps etc, and game all at the same time, and alt-tab between them, then you might want to consider moving up to 32GB. Taking it a step further, if you're using professional apps or running virtual machines, then 16GB is probably going to be a genuine limitation.

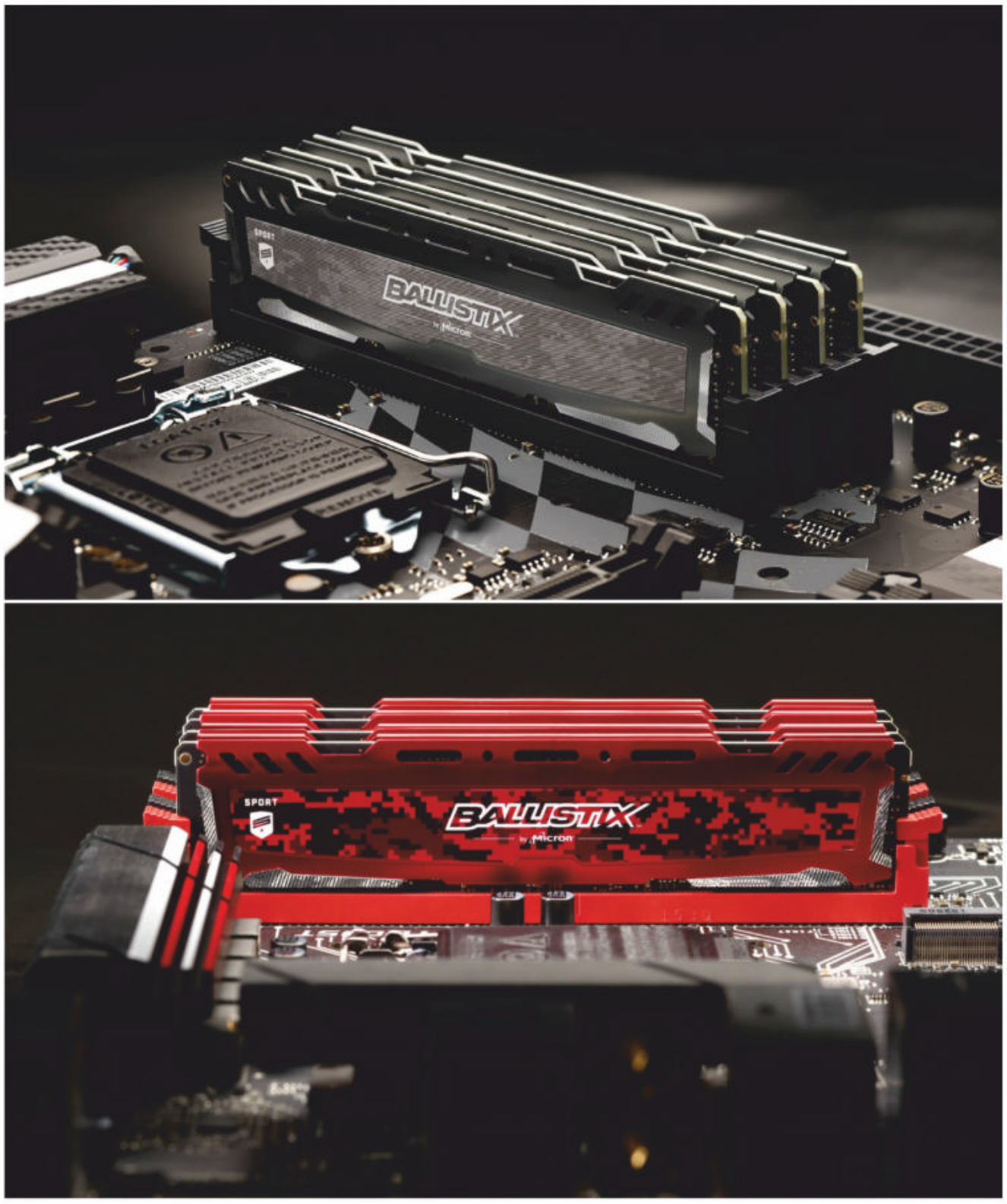
Note that the 32GB kits we tested here have twice the number of memory chips as the 16GB kits (dual sided vs single sided) and this can lead to some performance gains as you can see on the benchmarks page.

Whether you go for 32GB depends on your usage habits. 32GB is cheaper than ever and we aren't far away from 32GB offering a better dollar per GB ratio. Some applications will love it, but for the regular desktop user, it remains overkill.

"Whether you go for 32GB depends on your usage habits. 32GB is cheaper than ever and we aren't far away from 32GB offering a better dollar per GB ratio."

SPEED AND TIMINGS: WHAT EFFECT ON PERFORMANCE?

The primary performance metric after a memory kit's speed is its CAS latency or CL. CL ratings are something of a misnomer as many consumers assume that a kit with a speed and CL of DDR4-3200 C16 is the same speed as a kit that's DDR3-1600 C8. While it's true that effective CAS latency remains the same between the two kits, it's just one timing and any latency losses that



occur are offset by the overall increase in speed.

As you can see on the benchmarks page, we ran a series of tests at different speeds to represent what is considered generic (DDR4-2400 C15), to high performance (DDR4-3200 C14) and overclocked (DDR4-4000 C16) memory. When compared to our reviewed kits, some interesting results become apparent. Synthetic results including latency and raw bandwidth steadily improve, but the improvements in the benchmarks that show gains with memory bandwidth start to show diminished returns at higher speeds. The X.264 and gaming results in particular show decent gains when moving from DDR4-2400 to 3200, but significantly smaller gains when moving from 3200MHz to 4000MHz.

The results show that an affordable DDR4-3200 kit is currently the sweet spot for value and performance. You'll gain a decent chunk of performance over a generic DDR4 kit without spending a whole lot more. The high performance and overclocking kits at DDR4-4000+ are usually a lot more expensive, while not providing a lot in the way of performance gain. They're useful only for point chasing competitive overclockers or those who really want the best without compromise.

XMP

XMP stands for Extreme Memory Profile. It was developed by Intel to simplify the way to set the speeds and timings of a memory kit without having set everything manually. Most AMD motherboards also support XMP, but some also support AMD's AMP. It's essentially the same thing. XMP tends to work very well, but once you get into the higher speed tiers, it can be problematic. AMD's Ryzen 1st and 2nd gen struggled with high RAM speeds, and Intel CPUs can also get finicky at high speeds. If you're looking to buy a very high speed kit, be prepared to do some manual tweaking in order to have it run properly. Some high speed XMP kits may simply be beyond the capabilities of your CPU's memory controller.

RGB IS EVERYWHERE

RAM manufacturers have extensive ranges of RGB equipped kits. A couple of years ago we'd have said that users seeking value or performance should stay away from RGB RAM. This is because RGB kits tended to be significantly more expensive. The gap is closing though.

The second reason is that RGB lighting tends to add electrical interference to sensitive RAM modules. You almost never saw high speed kits equipped with RGB for this reason. That's all changing now with most manufacturers comfortable with offering high end RGB RAM.

So if you want to bling up your system, you can combine looks and performance for not much more that the cost of the equivalent non-RGB kit.

PUTTING IT ALL TOGETHER

As you can see from looking at our benchmark results, DDR4-3200 is the sweet spot right now. It offers the best combination of performance and value. The cost of RAM is continuing to fall and compared to where we were a year ago, 2x8GB of good quality DDR4-3200 is an absolute bargain. At 3200 MHz, performance is well ahead of generic RAM, but doesn't lose out much to high speed enthusiast and overclocking kits.

RGB memory is a subjective topic. Do you want to show off your high performance PC or put it under the desk out of sight and out of mind? The choice is yours. Will we look back in 20 years with nostalgia? Or will we be cringing? Let's see in 20 years!

Whether you want to look at your RAM or not, prices are continuing to fall. It's as good a time as any to upgrade your PC with 16GB or more of memory. If you're coming from 8GB, you can look forward to more responsiveness, fewer page file accesses and the ability to multi task much more. If you're building a new PC, then 16GB at DDR4-3200 is where you'll want to be. Paying more for faster RAM means diminishing performance returns, while going for cheaper RAM will bottleneck your system. Just a few extra dollars over something like 2666MHz RAM will be well worth it.

MEMORY

Adata XPG Spectrix D60G

A unique memory kit from a company on the rise.

PRICE $159
www.xpg.com

In such a crowded and competitive market, sometimes memory products have little to differentiate them. When a product like the Adata Spectrix D60G manages to undercut the competition on price, you simply have to sit up and take notice. At $159 the Spectrix D60G offers the best value of the all the RGB kits in the roundup. Normally that alone would be enough to take out a winners gong, but this Adata kit is not some bargain basement kit.

The Adata Spectrix kit comes with primary timings similar to the other kits in this test at 16-18-18-36- 2T. It's good to see Adata hasn't taken the easy option by equipping poor memory ICs. Its performance was consistently at or near the top of the 2x8GB kits thanks to some aggressive sub timings.

What really sets this kit apart is its RGB implementation. Many kits content themselves with lighting at the top of the modules, whereas the Spectrix lighting effect covers a large proportion of the sides too. Adata claims 60% of the entire module is lit up. The plastic covering is highly opaque, though perhaps that last bit of vibrancy and definition is lost as a result.

Adata may not be the first name that comes to mind when it comes to performance DRAM, but the company sure is doing its best to make sure that it takes its place amongst the big players in the field. It's got a unique look, performs and overclocks well and is by far the cheapest kit in the roundup. What's not to like?

VERDICT: **This Adata XPG kit offers supreme value to go along with performance and a unique RGB design.**

10

MEMORY

Aorus RGB Memory

Why settle for two modules when you can have four?

PRICE $205 ($175 WITHOUT DEMO MODULES)
www.aorus.com

Gigabyte made a surprising push into the DRAM market in mid-2018 with its Aorus branded modules. What sets these apart is that a standard dual channel kit comes with optional dummy modules, which are perfect for making it look like your system is fully decked out with four.

The simply named Aorus RGB memory comes with 16-16-16-38 2T timings, where the TRAS of 38 is a little higher than some of the other competing kits.

We found that the Aorus memory was the weakest performing kit in the test and sometimes by some margin. The reason for this is several notably slower XMP sub timings. While this makes the kit widely compatible, it does have some performance impact, which is revealed in several of the benchmark tests. The difference isn't a lot compared to say, having a faster (or slower) CPU or GPU, but it's better to be leading the pack rather than trailing.

The Aorus RAM definitely has great looks. Its colors are sharp and vibrant. It's always nice to see orange done well! Being a Gigabyte product, it has seamless integration with the Gigabyte RGB Fusion ecosystem.

While the Aorus kit is a great way to bling up your system with four modules (for just a bit more than the cost of two) the weak XMP performance of the Aorus kit counts against it compared to the faster and cheaper Adata kit. But if you're prepared to tweak it, then the Aorus kit comes right back into contention.

VERDICT: **The Aorus is unique with its four modules, but its weak performance counts against it in a very tough field.**

7

PC PowerPlay POWER AWARD

MEMORY

Corsair Vengeance RGB Pro

Performance and good looks.

PRICE $179
www.corsair.com

The Corsair Vengeance Pro is of course a DDR4-3200 kit with 16-18-18-36 timings. Though a look at the many tight XMP sub-timings reveals why the Corsair kit is often in near the top of the benchmarks leaderboard.

While looks are always objective, the Vengeance RGB Pro has a lovely design with its nice and dare we say simplistic metal heat sink. Our kit came with a black finish, though Corsair also offers it in white. The top section of the module is lit with RGB LEDs and the colors are notably distinct and rich.

Corsair's iCUE software deserves a mention. Of course it controls the RGB effects of the Vengeance Pro kit and it can control other Corsair products too. It also offers additional functionality such as monitoring and timing information, useful if you're overclocking.

Speaking of overclocking, the Corsair kit was the equal best of the bunch, able to hit DDR4-3866 with 1.4V at its XMP timings. This would point to Corsair using a premium or binned IC in this kit and would go a long way to explaining its relative price premium. Since vendors are known to change IC, we'd be wary of saying that all kits will perform like this.

The Corsair Vengeance RGB Pro is a great blend of stock performance, RGB good looks and overclocking ability. Throw in the excellent functionality of the Corsair's iCUE software too. While it costs a bit more than some of the other kits in the roundup, the whole package makes this a top quality kit.

VERDICT: **Corsair's Vengeance RGB pro blends strong performance with fantastic looks and iCue ecosystem compatibility.**

9

MEMORY

Crucial Ballistix Sport LT

A no fuss 32GB kit that's all about value.

PRICE $268
www.crucial.com

Here we have the first of two 2x16GB kits in our roundup. Crucial's Ballistix Sport LT doesn't have any RGB lighting and is in fact quite subtle with its simplistic design, but that's something that won't bother a user who doesn't care about looks.

The Ballistix Sport LT kit is the only standard profile kit in our test. This makes it well suited to users who use very large air heat sinks. While it's not as big a problem as it used to be, tall RAM can still interfere with air coolers that don't take RAM height into consideration.

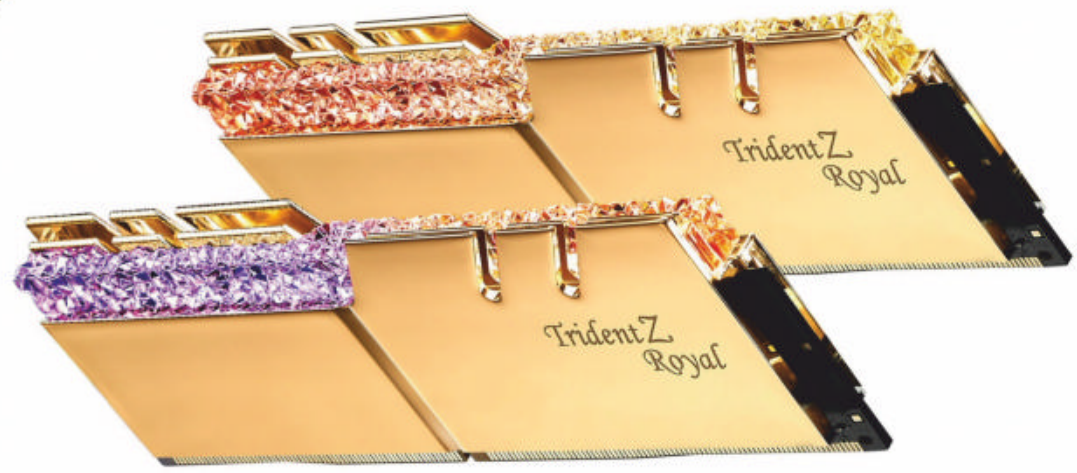
As a 2x16GB kit with a dual rank design, Crucial's was actually the best performing kit in the entire roundup. The margins as always are small but a look at the benchmarks shows how dual rank memory helps performance, though it does means there's a tiny latency hit.

Where the Crucial Ballistix LT kit excels is its value. At $268 it's proof of just how much DRAM prices have fallen in recent times. It's not all that much higher than some of the 2x8GB kits and it adds that extra degree of future-proofing. Of course if you're dealing with large data sets, several memory hogging applications or even alt-tab out of games and want to minimise page file access, then 32GB can come in handy.

The Crucial Ballistix Sport LT offers terrific value, which along with great performance and a highly compatible low profile design makes it a solid choice for those looking to make the jump up to 32GB.

VERDICT: **The Aorus is unique with its four modules, but its weak performance counts against it in a very tough field.**

10



MEMORY

Kingston HyperX Predator

A quality kit that needs a price adjustment.

PRICE $329
www.hyperxgaming.com

Kingston's HyperX Predator is the second of two 3200MHz 32GB kits in our roundup. A 2x16GB kit is perfect for demanding users or those limited to two memory slots such as you'd find on an ITX motherboard. Its primary timings are 16-18-18-36 at 1.35v. The Kingston HyperX Predator is a non RGB kit. While it's perfectly suitable for a gamer thanks to its inherent double rank performance advantage (albeit a small one) its lack of RGB means it probably won't find its way into a blinged up system. That will suit many people just fine.

The Hyper X kit shares quite a lot in common with the Crucial kit. In fact other than a few secondary sub-timings, the entire list of timings we could read were identical. Although time constraints with so many different kits prevents us from really dialing in the best overclock for each kit, the Crucial and Kingston kits had about the same overclocking headroom too. It topped out at 3733MHz at XMP timings and 1.4V.

The problem Kingston has with this kit is its value, or lack thereof at the time of writing. With so little to differentiate a lot of kits, if one falls behind on price alone then it takes a big hit. While it's a highly capable kit, it needs a price drop to return it to competitiveness. Do check the pricing engines for the latest pricing as with almost daily market volatility, our quoted price may well have been adjusted downwards from the time of writing.

VERDICT: **Kingston's HyperX Predator is an excellent 32GB memory kit that we're hoping gets a more competitive price.**

6

MEMORY

G.Skill Trident-Z Royal

Memory with looks suitable for royalty.

PRICE $219
www.gskill.com

G.Skill is well known in overclocking circles for its willingness to push the envelope with ever faster memory kits. If you're after maximum performance, G.Skill is usually in the shortlist.

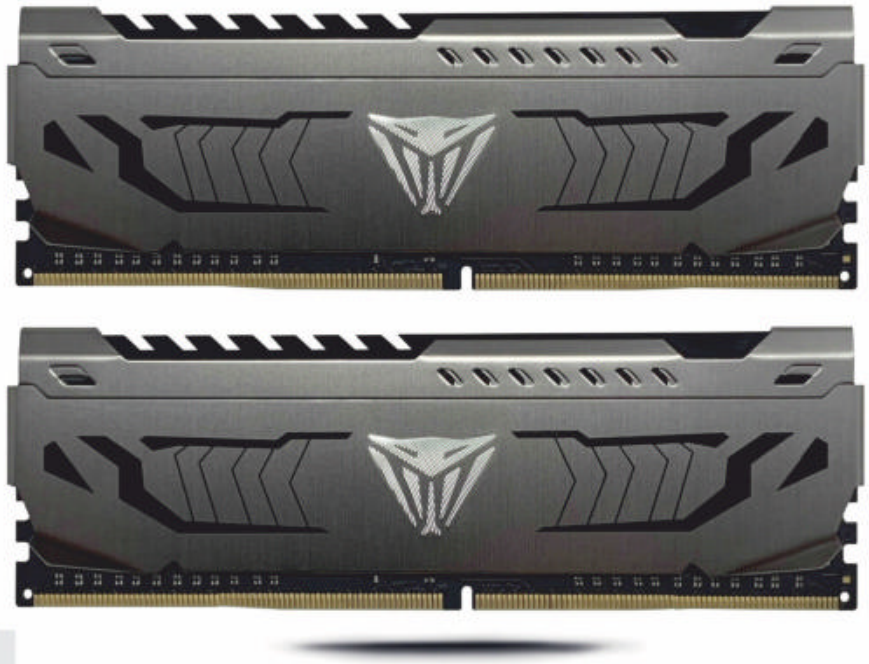
The Trident-Z range has been available in one form or another for many years, but never has it looked like this. It comes sheathed in a magnificent mirror like silver or gold finish. It really does give that wow factor when you open the box for the first time. Even the packaging is a premium match for the kit. The gorgeous finish is complemented by a sparkling crystalline light bar. As it's a clear plastic material, the colors are especially vibrant and accurate. Colors bounce around everywhere. Look are always subjective, but this is the best looking memory kit I've personally ever seen.

The G.Skill kit's performance was about in the middle of the pack. Where it excelled was its overclocking performance. While it doesn't come with Samsung B-Die like you'd likely find in a 3200 C14 kit, for a lesser spec kit its OC was still noteworthy compared to the other kits in the test.

The Trident-Z Royal carries quite a higher price compared to some of the other kits, which hurts it in an especially competitive market. But its supreme good looks and roundup leading overclocking ability elevates it. As with the other kits in the test, pricing is volatile right now, but as a premium product, it's always going to carry a bit of a premium price.

VERDICT: **A gorgeous memory kit with plenty of OC headroom, though it carries a bit too much of a price premium.**

8



MEMORY

Patriot Viper Steel

One to look out for if you're looking for value.

PRICE $149
www.patriotmemory.com

Patriot is a brand that doesn't have the Australian market presence of the likes of Corsair or G.Skill, but that doesn't mean that it's not well regarded in the global PC market. The company is also popular amongst gamers with its Viper gaming brand.

The Patriot Viper Steel we have on hand to test is the cheapest kit in the roundup. It matches all of the other kits with its CL 16-18-18-36 primary timings so stock performance doesn't suffer in any way. Of course as a value oriented kit it doesn't come with RGB or an extravagant heat sink. Its grey metal covering is well suited to a neutral color build.

As a budget kit, these modules are likely using more affordable Hynix ICs which aren't known for their overclocking prowess. At $149 this is more of a set XMP and forget type of kit. If you want to OC, you'll have to jump up in price to a 3200 MHz 14-14-14 kit which should have the more OC friendly Samsung B-Die IC.

The Patriot Viper Steel Series kit is a good strong value offering. Forget about bells and whistles. This is a kit you should be looking at as a step above the 2400 or 2666MHz kits. You'll get a boost in performance without having to spend a lot more. It's a good kit, even if it's rather unremarkable. Not everyone cares about RGB bling though, so that suits a lot of folks just fine.

VERDICT: **The Patriot Viper Steel kit is a good, solid competitor and offers good value if you don't care about bling.**

8

MEMORY

Team T-Force Nighthawk RGB

Attention grabbing memory.

PRICE $169
www.teamgroupinc.com

Take one look at Team's Night Hawk memory. It's definitely got the most extravagant design of all the kits in the roundup. If you're after something eye catching, it's one that you'll want to strongly consider.

The Team Night Hawk RGB memory has impeccable build quality. It just feels solid, weighty and well made. The white heat sink of our test kit extends well beyond the top of the modules so this will be something to keep in mind of you're planning to use a large air cooler. We can't imagine you'd be doing that though. This is a show off kit for a water-cooled build! It's also got an interesting default RGB effect with a fast pulse to go along with rotating colors.

The Night Hawk comes in at $169 which isn't a bad price at all for an RGB kit. Just a few months ago this kit would have been worth a lot more.

Performance wise, the kit was in the middle of the pack, as we'd expect with Hynix-equipped kits with similar timings. We should note that the kit's overclocking wasn't that great. With DDR4-3600 at 1.4v with the default XMP timings being unstable. But again, this isn't the kind of spec kit you'd buy for a maximum OC. This is one that sits in the performance sweet spot whilst looking great.

You'll know if this kit appeals to you after just one look. If its aggressive design excites you, then combined with its great value, it comes highly recommended.

VERDICT: **Team's Night Hawk RGB memory will command attention in a white themed show build.**

9

Memory Benchmarks

Indictaes Best Result

	AIDA64 Memory Read	AIDA64 Memory Write	AIDA64 Memory Copy
	MB/s	MB/s	MB/s
Adata Spectrix D60G 2x8GB	46668	46244	41608
Aorus RGB Memory 2x8GB	46327	46071	41151
Corsair Vengeance Pro 2x8GB	46588	46215	41495
Crucial Ballistix Sport LT 2x16GB	47754	48317	45261
Kingston Hyper X Predator 2x16GB	47401	48123	45651
G.Skill Trident -Z Royal 2x8GB	46888	46063	41904
Patriot Viper Steel 2x8GB	46943	45908	41366
Team T-Force Nighthawk 2x8GB	46437	45992	41267
DDR4-2400 15-15-15 2x8GB	35487	34849	32792
DDR4-4000 16-16-16 2x8GB	58148	48182	43871
DDR4-3200 14-14-14 2x8Gb	47711	46512	43438

	AIDA64 Memory Latency	7Zip	X264 FHD Video Encoding
	nanoseconds	Million Instruction per second	FPS
Adata Spectrix D60G 2x8GB	44.9	57066	65.76
Aorus RGB Memory 2x8GB	44.9	53627	65.63
Corsair Vengeance Pro 2x8GB	45.0	56956	65.92
Crucial Ballistix Sport LT 2x16GB	46.8	59610	66.19
Kingston Hyper X Predator 2x16GB	46.9	59567	65.95
G.Skill Trident -Z Royal 2x8GB	45.0	55575	65.85
Patriot Viper Steel 2x8GB	45.0	56411	66.01
Team T-Force Nighthawk 2x8GB	44.9	55428	65.76
DDR4-2400 15-15-15 2x8GB	53.7	50848	64.05
DDR4-4000 16-16-16 2x8GB	37.8	59205	66.81
DDR4-3200 14-14-14 2x8Gb	41.3	55958	66.08

	3DMark Time Spy	Cinebench R20	Ghost Recon: Wildlands
	Physics Score	Score	1080p, Low, Avg FPS
Adata Spectrix D60G 2x8GB	11527	5281	185.0
Aorus RGB Memory 2x8GB	10714	5286	181.5
Corsair Vengeance Pro 2x8GB	11428	5294	185.2
Crucial Ballistix Sport LT 2x16GB	11907	5296	186.3
Kingston Hyper X Predator 2x16GB	11898	5291	186.5
G.Skill Trident -Z Royal 2x8GB	11220	5289	184.4
Patriot Viper Steel 2x8GB	11380	5287	185.0
Team T-Force Nighthawk 2x8GB	11431	5300	184.9
DDR4-2400 15-15-15 2x8GB	10212	5279	176.1
DDR4-4000 16-16-16 2x8GB	12111	5304	188.1
DDR4-3200 14-14-14 2x8Gb	11466	5304	185.0

	Middle Earth: Shadow of War	Counter Strike: Global Offensive
	1080p, Low, Avg FPS	1440p, Max, Avg FPS
Adata Spectrix D60G 2x8GB	228	337.42
Aorus RGB Memory 2x8GB	227	334.59
Corsair Vengeance Pro 2x8GB	229	336.51
Crucial Ballistix Sport LT 2x16GB	228	335.66
Kingston Hyper X Predator 2x16GB	229	335.94
G.Skill Trident -Z Royal 2x8GB	228	335.70
Patriot Viper Steel 2x8GB	228	335.98
Team T-Force Nighthawk 2x8GB	228	336.67
DDR4-2400 15-15-15 2x8GB	215	323.73
DDR4-4000 16-16-16 2x8GB	235	339.60
DDR4-3200 14-14-14 2x8Gb	232	336.56

CPU: Intel i9-9900K @ 5.0 GHz (all cores) ▪ **Motherboard:** Asrock Z390 Taichi ▪ **Graphics Card:** Nvidia GeForce GTX 1080 Ti ▪ **Power Supply:** Corsair RM850i ▪ **Storage:** Samsung 970 Evo 1TB SSD ▪ **Cooling:** Corsair H100i Pro ▪ **Operating system:** Windows 10 Pro 64bit build 1903

ASUS X570 Buyer's Guide

PICKING THE RIGHT X570 MOTHERBOARD FOR YOUR NEXT PC.

The next generation of AMD Ryzen CPUs is here, pairing Zen 2 architecture with PCI Express 4.0 connectivity across multiple models that are based on the ASUS X570 chipset. This is the first desktop chipset to give you PCI Express 4.0 connectivity, granting you greatly expanded throughput – an extraordinary 2GB per lane! These motherboards are designed for the future – you'll be prepared for any SSDs, graphics cards, and other peripherals you might want to plug into down the track. Here's our rundown of ASUS' X570 range.

THE REPUBLIC OF GAMERS CROSSHAIR SERIES

The Crosshair VIII boards are designed for the serious overclocker and the gamer who wants to eek every bit of power from their system. These boards will push your PC to the next level, and future-proof it for years to come.

The Crosshair VIII Formula sports an integrated VRM water-cooling solution with its CrossChill EK III hybrid water channel, as well as active chipset and M.2 aluminium heatsinks to keep it cool as it goes to work. With a huge VRM, 16 PowIRstages and MicroFine Alloy chokes, this is a board designed to push the CPU as hard as it will go, while remaining stable with a constant flow of power. The unit hosts a 1.3 inch OLED display for information on CPU speed, BIOS flashback status, and more, and the integrated Intel Wi-Fi 6 adapter and Aquantia 5G controller allow for superior connections and significant throughput. This is the top of the range board for serious builds, supporting 4x DDR4 memory, as well as two SLI plus three CrossFireX GPUs.

ROG Crosshair VIII comes with WIFI6 and 2.5Gb LAN.

The Crosshair VIII Hero is equally powerful but is designed with air-cooled systems in mind. It's the same size and has many of the same incredible features, and just as much memory capacity. You can use the Hero without losing any power, so it's still ideal for overclocking. It features a light-up display for troubleshooting, and features connectors for AIO and custom loop pumps if you want to outfit your own cooling solution. There's a 2.5G LAN chip in place of the Aquantia if you're going for a pure ethernet connection.

The Crosshair VIII Impact is a mini-DTX two-DIMM board that allows for extreme overclocking in a smaller package. The 1DPC design enables superior DRAM OC headroom alongside the latest OptiMEM III Technology. It has many of the same features of the other Crossfire boards, including PCIe 4.0 lanes, Wi-Fi 6 networking, and Pre-mounted I/O shield. Metal backplate, SODIMM.2 and ESS® SABRE9023P headphone DAC are also in placed to ensure zero compensation on expansion even after going small.

Asus' Prime series boards are focused on work – but they can still play!

THE ROG STRIX SERIES

The Strix series is designed for complicated, interesting builds, and while it doesn't push quite as hard as the Crosshair series, it still has many of the same strengths and features. ROG has focused on giving gamers features they'll use.

The Strix X570-E Gaming and Strix X570-F Gaming are the headliners of this range, and they're both designed to be stunning to look at, but also extremely powerful and flexible. The E has a slight edge over the F when it comes to overclocking: its Digi+ VRM has 12+4 power stages, while the F has 12+2. Both feature superior copper heatpipes for improved dissipation, as well as OptiMem, a technology that focuses on improved stability and performance when you're tweaking RAM, a vital tool for tapping into your

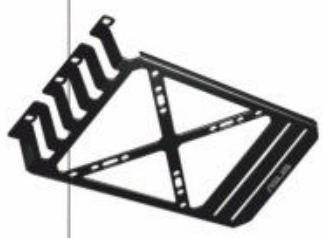
computer's full potential. They're built for fan or liquid cooling, depending on your set-up. Both boards feature 4 x DDR4 memory and HDMI 2.0 support. The F is designed with ethernet connections in mind, while the E is Wi-Fi 6 compatible and gives you the option of Bluetooth 5 support. Both use the powerful SupremeFX S1220A codec with double Amp, too.

The Strix X570-I Gaming is a Mini-ITX board that packs a lot of the same punch into a smaller form. It's got an extremely powerful VRM with 8+2 power stages – much more than you'd usually get in a mobo this size. It slots in under its own fan and features a metal backplate for superior cooling, which lets you push it hard for some serious overclocking. It features 2 x DDR4 memory, along with built-in HDMI 2.0 and DisplayPort 1.4 outputs, Intel Wi-Fi 6 and optional Bluetooth 5.0 support, making it ideal for a home cinema set-up. Finally, CROSSHAIR VIII and ROG STRIX X570 series come with USB BIOS Flashback for the absolute peace of mind when it comes to BIOS updates.

TUF GAMING

The TUF gaming range is designed to deliver the gaming features you need at a price you can afford, all in a board that you can rely on to get the job done. The TUF GAMING X570-PLUS (WI-FI) fits the bill. Its VRM uses 12+2 DrMOS power stages. It sports a high heat tolerance and TUF chokes to ensure steady power is being fed to the CPU. The ethernet port even features TUF LANGuard to protect against any potential hazards it might face. This is a board that you can depend on, with its PCIe x16 slots featuring SafeSlot reinforcement to improve retention and increase resistance to shearing.

The ROG range is focused on performance, while the TUF range delivers value and reliability.



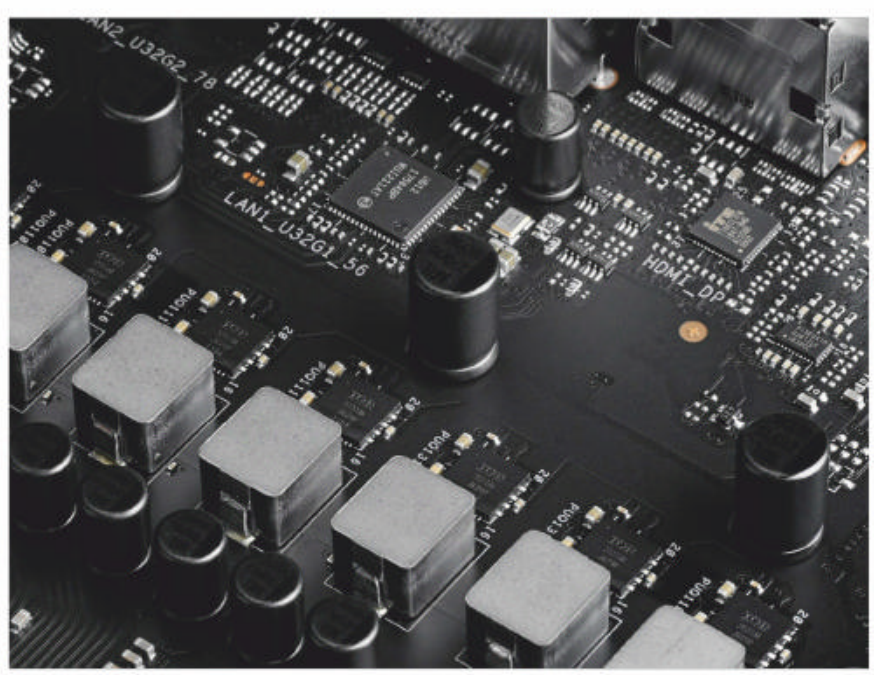
This VGA holder can secure your graphics card.

THE PRO AND PRIME SERIES

Sometimes you want a system with some flexibility that won't look out of place in the office. The Pro WS X570-ACE pairs the X570 chipset's features with ECC RAM, Dash remote management network, plus expansions to server grade parts such as enterprise NVMe and more. It's for when you need power beyond gaming – it's ideal for creators who need some serious power.

The Prime series' X570-PRO and X570-P are aimed at businesses, freelancers, and anyone who wants a versatile, powerful business PC. They can still handle a heavy gaming load, but their aesthetic and sensibilities are different. The Pro is more feature-rich, but the P will still deliver the goods. Last and not the least, all ASUS X570 motherboards come with custom made high performance PCH fan from Delta, for extended performance and longevity. Serving your system with confidence. ■

Excellent power delivery sub-systems make for a smooth overclocking experience.



GAMING LAPTOP

Acer Predator Triton 500 (NH.Q4WSA.006-C77)

Acer's latest gaming laptop is taking a three pronged approach to be the best professional gaming ultrabook, but is it sharp enough to cut through the competition?

PRICE $3999
www.acer.com

One of the most striking features of the Triton 500 is just how thin it is. With a closed profile of just 1.8cm it's knocking on the door of ultrabooks despite being a 15.6-inch performance gaming laptop. The sleek Triton 500 can be configured to have an Intel Core i7-8750H CPU, an Nvidia GeForce RTX 2080 GPU, 32GB of RAM and 512GB of NVMe SSD storage. This is a surprisingly powerful set of components to conceal in such a sleek form factor.

The metallic clamshell comes in a subtle blue-black colour and while it does have angular bevelled edges, powder-blue rear exhaust vents and a unique mosaic topside fan inlet, overall, its understated and classy design would slot neatly into a business environment. The membrane keyboard is a little spongy for gaming, but it's fine for typing and while we would prefer a slightly bigger trackpad it was smooth and responsive. With three USB 3.1 Type-A ports, an Ethernet port, DisplayPort, Thunderbolt port and an HDMI out, alongside the regular 3.5mm audio and microphone jacks, there's ample connectivity on offer.

The Triton 500 got within 10% of the average raw CPU performance and overall work benchmarks for laptops we've tested with the same CPU/GPU configuration. We are starting to see laptops appear with 9th generation Intel Core i7 CPUs (and unusually, Acer actually released a Core i7-9750H model in line with this one), so this device might date a little quicker, but it's a good value proposition when weighed against performance. The 512GB NVMe SSD was also speedy, offering read and write speeds of 3439MB/s and 3129MB/s respectively. That's between six and seven times faster than SATA 3 connected SSDs and offers double the write speeds of early PCIe connected SSDs.

Acer's Predator Triton 500 keeps averages above 78fps on Ultra 1080p settings across all the games we tested, with Middle Earth: Shadow of War running at close to 100fps. This means that there's more than enough power here to take advantage of the Speedy 144Hz G-Sync screen with almost anything you throw at it. It even manages 50fps averages when using 1080p Ultra with ray tracing turned on in Metro: Exodus.

Despite this heavy load max temperatures were pretty reasonable. The CPU and GPU managed to stay under 97 and 69 degrees respectively, across the entire benchmarking process, and while the fans can get rather noisy at full tilt, the automated settings keep them quiet generally. The RTX 2080 on the Triton 500 is unlocked, so you can even utilise a bit of that thermal overhead on the GPU to push a few more frames per second, if you want.

> **"Acer's Triton 500 keeps averages above 78fps on Ultra 1080p settings across all the games we tested..."**

It's interesting to compare the Triton 500 to Razer's 2019 Blade laptop since they have an almost identical spec sheet, weigh within 66g of each other, are no more than 2cm different in shape and offer nearly identical battery capacities. The only differences are that the top Predator Triton 500 model has double the RAM allocation of the Blade, a G-Sync Screen and costs $1100 less. *JOEL BURGESS* PC

+
- Non-aggressive design will fit anywhere.
- Excellent performance.

-
- Can be noisy at times.

VERDICT: **A powerful performance gaming laptop in a compact work-friendly package that is much better value than some competitors.**

10

EGPU ENCLOSURE

Razer Core X

Affordable eGPU performance.

PRICE $469
www.razer.com

The Razer Core X is the spitting image of Razer's more expensiveCore V2, but larger at 6.6 x 14.2 x 9.1 inches. The case is constructed out of hefty metal with a black painted exterior. There are cutouts on each side of the outer shell, providing cool air to the Core X's internal fan and your GPU. The front of the case features a slotted design while the bottom has a wide rubber foot to keep the case stable.

The Core X features the same simple sliding mechanism in Razer's flagship V2, which makes it easy to open. Pulling the rear folding panel unlocks the mechanism, allowing you to pull the GPU dock out. Just be sure not to carry the Core X by this handle, as this will cause the exterior case to slide off.

Most of the Core X's bulk can be attributed to the included 650W SFX power supply, which makes it considerably wider than its predecessor. While it isn't as elegant as the Core V2, the PSU allows you to install more power-hungry GPUs, up to 500W.

The internal motherboard is simple. Front and center is the PCIe x16 slot for your GPU. Before you install your GPU, you need to remove the placeholder bracket, which comes with a thumb screw. To release the GPU, you just to push a small switch on the front of the PCIe slot.

We tested the Core X with an Nvidia GeForce GTX 1070 Founders Edition (Razer supplied a 2080 Ti, but that seemed a little beyond what most gamers would be aiming for) graphics card and an external FHD 60Hz monitor. To get the maximum performance out of your eGPU, you'll need to go to display options and choose to extend your display to your external monitor only. We tested the Core X with and without an external monitor to illustrate how much performance is lost from the internal display's loopback.

For the purpose of this review, Razer provided us the Blade Stealth ultrabook. It has an Intel Core i7-8550U, 6GB of LPDDR3-2133 memory, a 512GB SSD, and a 13.3-inch QHD+ (3200x1800) touchscreen display.

In 3DMark, The Razer Core X exhibits performance comparable to the Core V2, which is to be expected. The Thunderbolt 3 bandwidth restrictions damage their scores overall, but using an external display alleviates this. Because the Core X is using the Blade Stealth, which has an i7-8550U, it falls short of the competing laptops in physics performance.

As for gaming, Alien: Isolation is easy to run, so any gaming system with adequate GPU power can achieve well over 60 frames per second. With the Core X and an external display, the Blade Stealth delivers close to 160 fps.

> **In 3DMark, The Razer Core X exhibits performance comparable to the Core V2.**

The Razer Core X is incredibly price effective, especially for an eGPU. It offers similar build quality and performance as the more expensive Core V2 without the flashy lights and additional ports. The only eGPU setup the Core X can't definitely top price-wise is the Aorus Game Box because of its included GTX 1070.

However, the Core X can support any modern GPU, and can be upgraded in the future. This makes the Razer Core X easy to recommend.

ALEXANDER QUEJADO PC

+
- Excellent build quality and aesthetics
- Easy to use
- Competitive price point

-
- Bulky in comparison to other eGPUs
- Some performance is lost over Thunderbolt 3

VERDICT: **The Razer Core X is one of the most competitively priced eGPUs on the market, as well as being attractive and solidly built.**

8

ROUTER

Asus ROG Rapture GT-AX11000 802.11ax Tri-Band Gaming Router

Huge in every way.

PRICE $848
www.asus.com/au/

"Oh my God, you've got to be kidding me!" The wife had a point: even without its antennae in the recommended, partially-reclined configuration, the Rapture is a huge, ungodly beast that cannot be discretely positioned in any home. We put off mentioning the colossal $848 price tag.

Despite the dimensions, Asus' gargantuan gaming router only has four Gigabit Ethernet ports though there is a 2.5Gbps W/LAN port to complement the primary WAN. The main features lie inside and a quick glance at the browser-based Dash Board is instructive. The homepage displays the all the main statuses plus live graphs showing network traffic, average network pings, ping deviation(!), global game server pings plus Aura RGB lighting effects for the top logo and settings that configure a programmable button on the chassis.

Automated port forwarding is an impressive gaming feature. Rather than researching your favourite game's ports and fiddling with IP addresses, the Rapture shows you a picture of the game, lets you choose which platform(s) you're playing it on and then prompts you to choose your device from a dropdown menu. It's never been easier. However, not all current games are listed so be prepared for manual entries.

The Game Radar section expands on the Dash Board's mini-view where game servers in various countries are pinged for performance monitoring. It's great for an at-a-glance network health check but the number of games supported is very limited and you can't add more. Hopefully, these lists will expand quickly as the product matures.

There are all kinds of network monitoring tools that are presented in a way that makes it easy to identify bandwidth hogs and roadblocks. They can also track which devices are visiting which websites which might be handy for concerned parents but gave us serious privacy concerns. There are VPN terminations, USB file server features and every other tool you might want.

The Wi-Fi 6 performance blitzed our tests (we now need new tests) in that it managed to transmit our 115/5 cable internet connection two floors up without any need for extenders. It even did so with 1ms faster ping than rivals. However, the potential throughput is massive with the "11000" moniker reflecting the (theoretical) potential megabits per second it can manage. That's thanks to tri-band compatibility (2.4GHz plus 2x 5GHz) married to an illegal-in-some-countries 160MHz frequency band. In real-world tests it was hitting 120Mbps transfers over 2.4GHz (which is around three times faster than predecessor technologies) and 500Mbps in 5GHz (which is about the same). However, if you have supporting client technology (like Wi-Fi based upon Intel's 9260 chipset) which supports 160Mhz transmission, you can reach insane wireless transfers of almost 1200Mbps (upstream and downstream).

"Automated port forwarding is an impressive gaming feature."

Unless you've been counting the days for such peak wireless throughput, everything about this router is overkill and not nearly worth the money. But that doesn't mean we're not impressed.

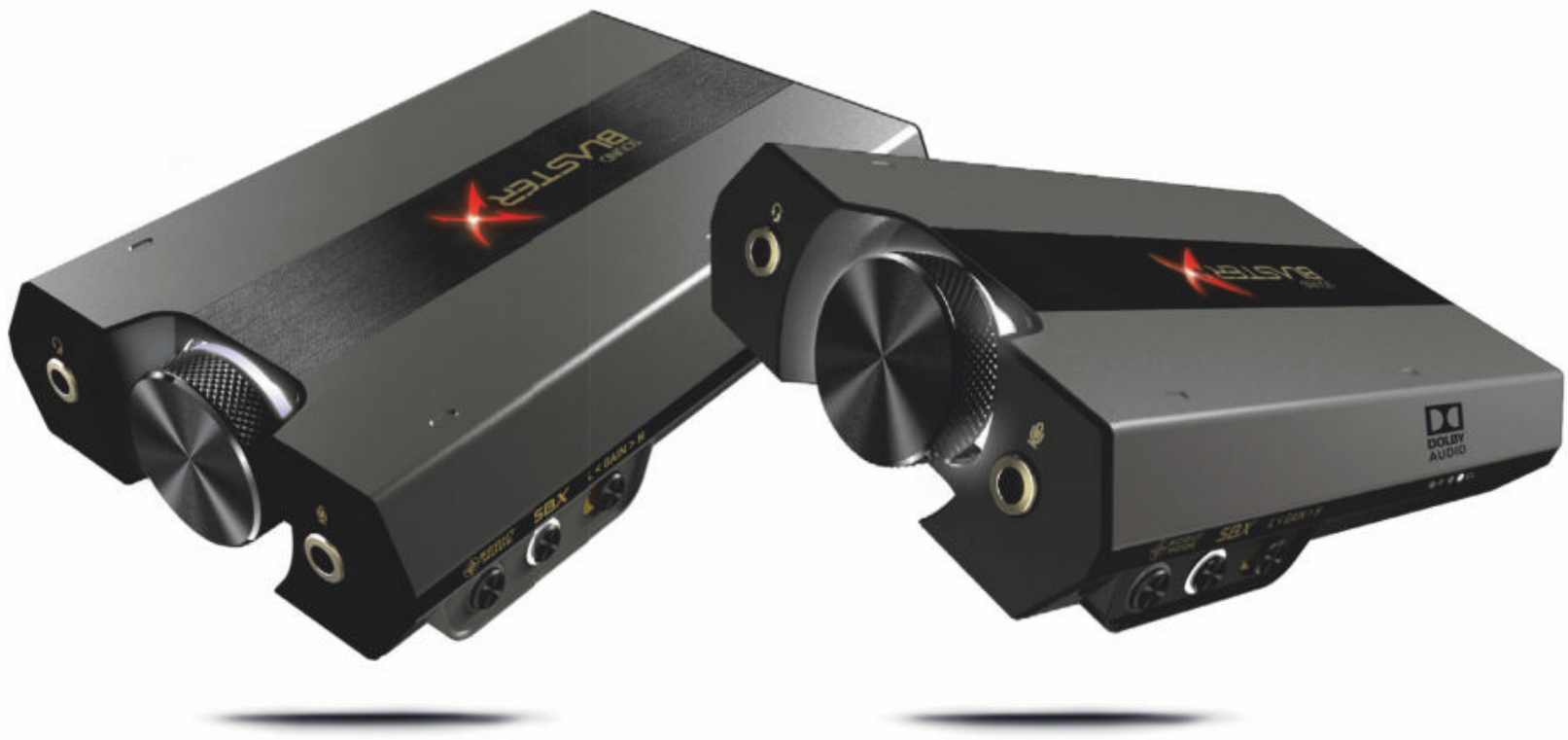
NICK ROSS PC

+
- Amazingly well featured
- Incredible performance

-
- Too much for most gamers
- Amazingly expensive

VERDICT: **Performance that's ahead of its time. But few will get value from buying this absolute unit.**

8



DAC

Creative Sound BlasterX G6

Boosted audio for PCs and consoles alike.

PRICE $228.95
www.creative.com

The G6 is the successor to the G5, but also carries the legacy of the E5, a mini-amp that worked wonders with both PCs and mobile devices. With a 130dB and 32-bit/384kHz DAC, plus support for Dolby Digital decoding and 5.1 and 7.1 virtual surround sound, there's a lot under this small hood.

The device itself is only a little bigger than a deck of cards, so it doesn't need a lot of space, though cables need to be plugged in from two ends.

The main advantage in something like the G6 is its compatibility on both ends. The PC or console side is one thing, but the fact that any pair of headphones will work on the other negates the need to buy a dedicated gaming headset. There's a lot of technical stuff going on to make this happen, and we found it wasn't all that important to recognize how it all works – the fact it consistently did was good enough.

A simplified explanation is that the G6 amplifies both the left and right channels individually using discrete components to boost and clarify audio output. Standard headphone amps do both channels at once, which is fine for music but not ideal for games that have separate signals going to each ear.

We tried it first on a PS4, where we connected the optical cable to the port in the back and one of the USB ports in the front. On a PC, though, it's a little different because of the Sound Blaster Connect desktop app, which offers greater customization. It would've been nice to carry some of the settings from the PC to the console however, because the G6 doesn't have internal memory to store settings like that, we weren't able to replicate any of the custom features when playing on a console.

We noticed an audio boost immediately once we fired up the G6 – thanks, especially, to a Creative technology called Scout Mode that enhances the ambient noises. Footsteps or voices come through a little clearer and louder, offering a tactical advantage when moving or hiding to avoid ambush enemies – and all of that is done without also cranking up the volume.

But if you wanted to, you could boost it by switching the gain from low to high, amplifying all audio coming through the headphones. With Wolfenstein II, for instance, the boost helped to tip us off when an enemy was moving closer without having eyes on them.

Turning on the SBX mode only impressed us further. It felt like having a surround system between the ears. This mode adds spatial audio enhancements using algorithms to simulate a wider soundstage.

> **"A simplified explanation is that the G6 amplifies both the left and right channels individually."**

The algorithms, as good as they are, don't necessarily adjust volume levels for different sounds. For instance, you may be in a quiet area in a game, only for the music to jolt your ears once something dramatic happens.

At around $230, the Sound BlasterX G6 isn't a cheap add-on, either for a PC or console setup. Its focus is somewhat narrow, but if sound matters to you, you're guaranteed a boost here without having to invasively tinker with anything.
TED KRITSONIS PC

+
- Great sound quality
- Easy setup
- Works with PCs and consoles

–
- Cables are a little short
- No adapter for wall outlets
- A bit pricey

VERDICT: **If sound matters to you, you're guaranteed a boost here without having to invasively tinker with anything.**

8

ADVERTORIAL

Thermaltake's new H200 case is perfect in either black or white.

Thermaltake H200 Mid-Tower Chassis

THE PERFECT CASE FOR YOUR NEXT BUILD

The way you express yourself in your PC build is important for many enthusiasts. You do the research, you figure out what parts you want, and you make sure that it looks good inside and out. Your build might be different depending on your taste, the set-up in the room you want your computer in, and your reason for building the machine. But no matter what's on the outside, a good, smart chassis is what you're going to spend most of your time looking at. If you're going to be sitting at your PC often, perhaps you don't want anything gaudy, or a design that's going to feel dated down the track – but you also don't want to sacrifice on style.

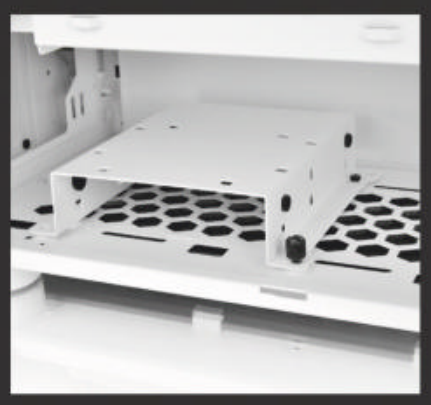
The Thermaltake H200 Mid-Tower Chassis has an extremely clean look. It's available in both black and snow variants, so you can pick to match whichever colour and aesthetic you prefer. The front is, literally, a blank canvas – a free space for any stickers, decals, post-it notes, or anything else you might want to put on there. It's the kind of timeless look that never goes out of style, no matter how long you hold onto it for. These towers are made from cold-rolled SPCC steel and are both sturdy and attractive – it's a case with some serious build quality.

The power button, headset and microphone jacks, along with two USB 3.0 ports and the RGB control button, are on the side of the tower, leaving the front clean and striking. It's a beautiful, simple design, but there's a big difference between simple and basic – the more you dig into the H200, the more flair it has. It's an ideal tower for all sorts of different builds; a versatile home for your parts that will look good in any room.

BELOW: The start white interior makes for a striking build.

BELOW MIDDLE: A handy drive caddy.

BELOW LEFT: A removable filter keeps dust from your PSU.



THE SPECS

This is a mid-tower chassis, with dimensions of 416 x 210 x 454 mm. It's not going to take up too much space, but it's more than big enough for the majority of builds. It supports an ATX motherboard set-up, as well as a Micro ATX or Mini iTX, depending on what you're looking to run. There's a single preinstalled 120mm rear exhaust fan at the back, and plenty of room for more 120mm-140mm fans, including Thermaltake's RGB Plus range. It'll also support a radiator of up to 280mm at the front or 240mm on top, as well as most Water 3.0 and Floe series cooling solutions, which is perfect if you're looking to put together a mid-size monster PC that will run Cyberpunk 2077 next year.

There's plenty of room for a massive GPU in here, too, with 320mm spare for VGA. It has drive bays for two 3.5" drives or three 2.5" drives, and a full seven expansion

A tempered glass side window swings back to allow easy access to your internals, and shows off RGB lighting beautifully.

slots inside, giving you a lot of control over your build. If you want something a bit simpler, it's perfect for that, too – it could be the case that houses a teen's first PC in their room as they move into the wider world of games beyond Fortnite, or the perfect system for that older relative who mostly wants to send emails and use Facebook but has admitted to you that they'd like to try and get into gaming as well. This is a versatile case, one that could be an ideal fit for many different builds and purposes – and it's ideal for anyone looking to run their games at high settings.

On the left side, you'll find a hinged door that gives you easy access to all your internal parts. If you want to swap parts out, keep an eye on a newly installed part, or just show off your build when you take your PC out for a LAN or elsewhere, the 4mm tinted and tempered glass door – which is built to avoid scratches and mishaps – is ideal. It's hinged on one side, with a simple magnetic latch on the other, making it easy to open your case and fiddle around in there at a moment's notice. It's a beautiful, elegant design, as well as being very practical.

THE LIGHTS

You'll want a clear line of sight into your case to make full use of Thermaltake's RGB range, too. The case itself can also get in on the fun: there's a lighting strip along the front of the H200. It's a tasteful addition to the chassis' otherwise minimalist facade, one that gives your PC an extra sense of personality without being overwhelming. The strip can filter between 19 different lighting modes and seven different colours, letting you customise your lighting experience in line with the rest of your set-up. You can have colours flow or wave into each other along the strip or have a single colour calmly 'breathe' when you get a notification, for instance – there are plenty of ways to customise your experience. Sync it up with your other RGB devices – which will be visible through the clear panel on the side - and you'll have a case that pulses and glows along with the action of your favourite games.

Inside the case you'll find a power supply shroud, letting you tuck it away to reduce clutter around your computer area. This shroud is ideal for hiding away cables as well, and there's a cable routing channel at the back for an easy external cable management solution. You want to be able to take pride in your PC set-up and clearing away all the assorted cables running from your machine is important. Thermaltake recognises this and has designed the case with aesthetics and convenience in mind.

The Thermaltake H200 Mid-Tower Chassis' design is the perfect metaphor for what building a new PC can feel like. It represents possibilities, and it's a way for you to express yourself and show off the quality of your own build. This elegant design looks fantastic in both its black and snow variants and looks equally at home in a small bedroom space, in a larger office, or in the middle of a LAN. It's a case for anyone who knows that sometimes the simple designs are the best, and that a good, strong case that's well made and looks good will never go out of style.

If you want to swap parts out, keep an eye on a newly installed part, or just show off your build when you take your PC out for a LAN or elsewhere, the 4mm tinted and tempered glass door – which is built to avoid scratches and mishaps – is ideal.

STICK WAVING CONTEST: HOW TO BRAG ABOUT YOUR PC IN THE 1990s

What does a geek do to satisfy the human urge to say "my thing is best thing", when the thing in question is a 1990s-era PC? How does he prove to other PC geeks that his PC is best PC, when hardly anybody understands what a PC's spec even means?

The nature of the PC as a, shall we say, collective instrument of sub-systems designed by different companies, and replaced by new versions at different rates, or becoming suddenly obsolete or integrated into so other system, and so forth, means the importance of each of those systems changes over time.

Importance to the gamer I mean. Consider the importance of your choice of CPU vs your choice of GPU, for example.

And therefore, so too has the way we brag about our awesome systems evolved, over time. And bragging about your PC has never been easy. And rarely has it been something non-PC geeks understand.

See, your basic geek... they're brand or platform focused. They started early. Console kids were fighting it out with primitive tools over first the Atari/Commodore, then Sega/Sony, and then eventually (and on some level ironically) Microsoft/Sony. And during that time, we PC freaks struggled - at least when it came to impressing our friends by describing our PC.

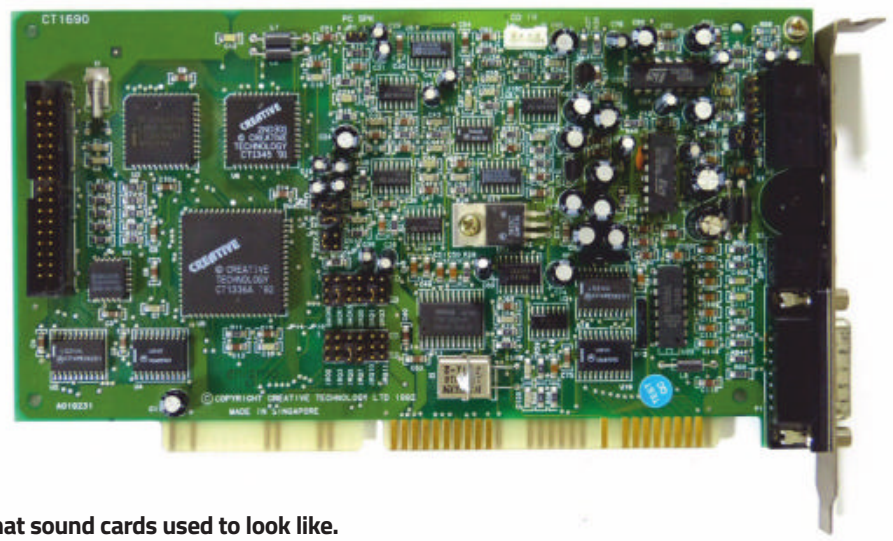
The ur-brag of course was: "I have a PC just for playing games". And it was enough to impress for years because even in the early 1990s, PCs cost $8,000.

Then from 1994, Australians all decided to buy a home PC suddenly, for some reason, and prices went down to a mere $3000-$5000, and pretty soon at least several of the king geeks at your local high school had PCs.

But how to establish top dog? PC bragging doesn't work using the afore-mentioned Holden/Ford method. What does the brand of your PC mean? That you paid $400 more for a slightly different shade of beige?

A "my rig is best rig" argument only works if your opponent can imagine how their experience of playing games would be better, if your PC was their PC.

Today, doing this is easy. Oh, nice machine dude, let me see your GPU... Oh a 2070?



What sound cards used to look like.

No, this Osborne, but one from the same company.

The 'Will it run Crysis?' of its day.

> These guys knew that DOOM had a low-detail mode. That you could run VGA games in CGA and, if you squint.

Pretty sweet, yeah... of course I went for the dual 2080s. Ti, natch. Wait, this might be a bad example. But you get the point: fancier GPU, better PC. It's a broad claim, but not a totally unreasonable one.

Back in 1993 - the year my family bought our first PC, from Osborne of course - bragging was hard. Oh you have a 17-inch monitor? Big screen is cool, but it takes up so much space, I prefer my 15. A 125MB hard drive? Seems like overkill (little did they know). Sound Blaster Pro for games that don't even have good sound anyway? Cool I guess.

As for the machine's single-speed caddy-tastic CD-ROM, it was, in the early 1990s, the equivalent of buying dual RTX 2080s: cool future tech with almost no content to use with it, and by the time there was enough content to need one, the component had been superseded by a better, cheaper, next-gen version.

But among the king geeks of a surprisingly-grim-and-dingy-in-old-photos-looking NSW state high school in 1993, there was one spec of that Osborne which actually impressed: that Osborne had 4MB of RAM.

So you can be sure it's not a typo: four megabytes of RAM. And sure, most people had no idea what RAM even was, and most of those who knew what it was didn't think of it as a thing you could get more of, but among a very select few - those earliest pioneers of the DIY PC scene - they understood what 4MB RAM meant.

These guys, the builders, came from families that certainly couldn't afford to buy a computer (what do you need a computer for anyway?), but who also didn't mind their - I'm going to hazard it was almost exclusively - teenage boys wandering the industrial parks of Sydney basically begging for IT scraps.

They knew the ragged edge of minimum system requirements. These guys knew that DOOM had a low-detail mode. That you could run VGA games in CGA and, if you squint, even figure out what was going on. And they were among the first to understand why RAM even matters at all.

My Osborne was - as previous related - a 486SX, which ran at 25MHz. It had a capricious Western Digital VESA-compatible graphics chip soldered to its motherboard, and a Sound Blaster Pro jammed in one of its ISA slots (for which Osborne had not provided us the correct drivers). It ran DOS5.0 and came with a copy of Windows 3.1 on at least six floppy discs. The 1x CD-ROM drive (in later years) could not play the interlaced video cutscenes of Wing Commander IV because it couldn't stream the data off the disc fast enough to keep up with the game's software video decoder.

ALL GLORY TO THE BUILDERS

Building your own PC in the early 1990s was different. My friend Matthew had a PC that was built almost entirely of all the standards and formats that the rest of the IT industry had decided to reject. He had an MFM hard drive. It used SCSI, but not just SCSI, an even weirder SCSI. I'm pretty sure it only had a SCART output for its non-VESA video subsystem. Also, remember (or ask an old if they remember) those 5.25-inch floppies that were of that particular density such that you could never use them in any other PC? Remember when you had to think of disk capacity in terms of density? As for that long-ago PC, Matt eventually blew it up... not because of dust or a faulty power supply, but because we spent a Saturday morning scraping all the inflammable parts off 20 packets of sparklers, dumped that all into the PC using a funnel, and then dropped a lit matchbook in after it. Good times.

But those 4MB of RAM made all the difference. In a land where 2MB was the norm, I had, like, twice as much RAM! Sure, getting games to use that RAM meant having to keep different boot disks on hand, for different games.

But when I ran Wing Commander, Expanded Memory was detected and full music played. And more importantly, when I ran Wing Commander II it actually worked.

Dune II? Amazing digital speech. Reporting. Yes sir. Reporting. Yes sir. Reporting. Yes sir. Enemy units approaching... from the South!

So despite the overall crapulence of that Osborne - with its wrong drivers, IRQ conflicts, CD-ROM that couldn't really be used to stream large amounts of data, and motherboard that died after six months and was replaced, at our actual house, by a man in an Osborne polo shirt - it did show me that every component of a PC was important, not just the (in the 1990s) CPU or (today) the GPU.

My first personal machine, the first PC I bought just for me, in 1998, had 256MB of RAM, and people thought I was nuts. My next PC, I can't actually remember the RAM spec, but I knew it was "lots" by the standards of 2000.

Today though? I'm running 16GB, and have been for a few years now. I could add another 16GB, but who gets impressed by 32GB of RAM these days?

Nah, I need to go way harder than that. Let's see what google says about "terabytes of RAM"...

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intel.com

MOBO

Asrock Z270M-ITX/AC Motherboard

$185

asrock.com.au

GPU

Asus DUAL-RX480-4G

$338

asus.com.au

MEMORY

16GB DDR4 Corsair Vengeance LPX

$249

corsair.com/en-au

STORAGE

Samsung SSD M.2 2280 NVMe 250G 960 EVO + 2TB HDD (any)

$169 + $50 *samsung.com/au*

CASE

Fractal Design Define S Nano

$115

fractal-design.com

PSU

SilverStone SFX Gold 500W SX500-LG

$110

Silverstone.com

SOUND

Your sound system

What you paid for it

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KEYBOARD

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MOUSE

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TOTAL: **$1,749**

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amd.com

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Gigabyte B450 Aorus Pro Wifi

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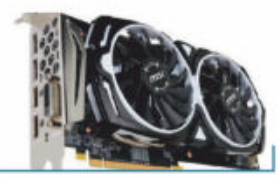
gigabyte.com.au

GPU

MSI RX 580 Gaming 8GB



$399

msi.com

MEMORY

Adata XPG Spectrix D60G

$159 *xpg.com*

STORAGE

Sandisk SSD Plus 240GB

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CASE

Corsair Carbide SPEC-02 Mid Tower Gaming Case

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PSU

SilverStone Strider Essential 500W ST50F-ESB $55

silverstone.com

SOUND

Cougar Phontum

$69

cougargaming.com

DISPLAY

AOC Q3279VWFD8 75Hz Freesync 32in IPS

$299

au.aoc.com

KEYBOARD

Tesoro Tizona G2N

$49

tesorotec.com

MOUSE

Cooler Master MM530

$59

coolermaster.com

TOTAL: **$1,709**

Thanks to this issue's memory round-up we've swapped in a couple of new kits to spice things up a bit this month - and both changes result in cheaper builds - winning! Both the Budget and Performance rigs get some love, with our performance machine now costing a couple of hundred dollars less, for no reduction in performance. Now is definitely the time to buy some new RAM!

PERFORMANCE

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MOBO
Asrock Z370 Taichi
$284
asrock.com.au

GPU
MSI GeForce RTX 2070 Gaming Z 8G
$1069
au.msi.com

MEMORY
Crucial Ballistix Sport LT 4X8GB
$268
crucial.com

STORAGE
2TB HDD (any) + SAMSUNG 500GB M.2 NVMe SSD 970 EVO PLUS
$199 + $50
samsung.com/au

CASE
Fractal Define R6
$209
fractal-design.com

PSU
Be Quiet! Dark Power Pro 11 850W Power Supply
$279
bequiet.com

SOUND
Sennheiser PC 373D
$329
en-au.sennheiser.com

DISPLAY
Asus ROG Strix XG32VQ
$859
www.asus.com/au

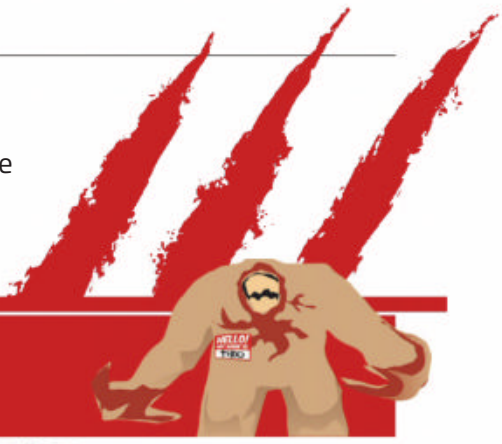
KEYBOARD
Cooler Master MK750
$189
www.coolermaster.com

MOUSE
Roccat Kone Aimo
$99
www.roccat.org

TOTAL: **$4,478**

THE BEAST

When overkill is barely enough...



CPU + COOLING
AMD Threadripper 2 2990WX + Corsair H105
$2,699 + $145
amd.com

MOBO
Asus ROG Zenith Extreme
$559
asus.com.au

VIDEO
Nvidia GeForce RTX 2080 Ti
$1,899
nvidia.com/en-au

MEMORY
4x8GB G.Skill Trident Z RGB quad-channel 3466MHz DDR4
$745
gskill.com

STORAGE
Samsung 960 Pro 2TB + Seagate Barracuda Pro 10TB
$1,589 + $599
samsung.com/au

CASE
Thermaltake Level 20 GT
$369
thermaltake.com.au

PSU
Corsair RM1000i Special Edition
$279
corsair.com/en-au

SOUND
Astro A50
$399
www.astrogaming.com

DISPLAY
Alienware AW3418DW
$2,099
alienware.com

KEYBOARD
Corsair K95 Platinum RGB
$249
corsair.com/en-au/

MOUSE
Corsair M65 RGB Elite
$85
rcorsair.com/en-au/

TOTAL: **$11,715**

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HOTWARE 277

with Terrence Jarrad

Nintendo Switch Lite

Price: $329.95 ▪ Distributor: Nintendo
www.nintendo.com.au

To someone who only ever uses their Switch in its portable form, the Switch Lite is quite a fantastic option for on-the-go gaming, though its price reduction and increased portability comes at a cost.

POWERED UP: It's smaller, it's cheaper, and it plays (most) Switch games. Also comes in three colours (announced so far, though it seems entirely likely we'll see more colours and game themed editions down the road). You can still pair detachable joycons with it too, so all is not lost on that front.

PLAYED OUT: Making this cheaper and more compact means compromise: fixed joycons (so no games that require them detached and flailing around), no output to TV, is not compatible with the OG Switch dock, no rumble and no IR motion camera. If you do buy extra joycons for this, remember you're going to need to charge them somehow and will need extra accessories for that too.

Clockwork GameShell

Price: $250 ▪ Distributor: Clockwork
www.clockworkpi.com

Now if you took the Switch Lite and the Boaz One, and mashed them together, you might end up with something like this: a modular, open source, portable game console.

POWERED UP: Looks a whole lot like a Gameboy, but has a quad core CPU, Mali GPU, 1GB of RAM, and 16GB microSD, all this on which to play all manner of emulated MAME, Atari, GBA, S/NES, Genesis and PS1 games.

PLAYED OUT: HDMI out is currently pointless as it absolutely kills the performance of the device. You're really going to want to play a lot of old games to justify this cost over, say, the Switch Lite.

BoringPhone

Price: $350 ▪ Distributor: BoringPhone
boringphone.com

You know the drill: get new phone with some cool features, then spend 90% of your time on it on social media instead of doing anything meaningful with your life. Hey, we've all been there. Enter the BoringPhone, which strips the features down to brass tacks, and won't let you install stuff.

POWERED UP: It has minimal apps, including phone/contacts, messaging, camera/gallery, maps and GPS, calendar, notepad, tethering, torch, and a few others. No Browser. No Email. No Facebook. No Twitter. No app store.

PLAYED OUT: It's hard to be disconnected from social media when it seems like that's where the entire world, and by extension our connection to other people, exists these days.

Boaz One Guitar

Price: $TBA ▪ Distributor: Boaz One
boazone.modularguitar.com

While billed as a modular guitar, the Boaz One is designed primarily with affordability in mind, to bring a quality affordable guitar to the masses.

POWERED UP: There's a body with a built in stand, a wing with a pick holder, three styles of pickups (in single coil and humbucker arrangements), and two bridges. And this is just the prototype phase.

PLAYED OUT: There's a lot of plastic in this thing, so if you're a "wood affects the sound" kinda person you're not going to like an injection-moulded plastic build, and we have to wonder if this is truly any better (or will be any cheaper) than any budget strat-pack style starter guitar. PC

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Falcon 3.0

Anthony Fordham is turning and turning in the widening gyre.

DEVELOPER: SPECTRUM HOLOBYTE
PERSONALITIES: GILMAN LOUIE
RELEASED: 1991
NUTSHELL: DESPITE NOT HAVING TEXTURES, IT BROUGHT (CLAIMED) MILITARY-GRADE FLIGHT MODELLING TO THE PC, WITH SUCH EXTREME PREJUDICE THAT FOR THE FIRST TIME, IT MADE PEOPLE UPGRADE THEIR COMPUTERS JUST TO PLAY THIS SINGLE GAME.

The PC didn't become the tech-leader for gaming just because of hardware. After all, what's the advantage of a PC that can play games just as well as other platforms, if it costs five times as much? The PC needed to show there was a reason for all that grunt. And at the dawn of the 1990s, that reason was the PC owner's thirst for insanely detailed combat flight simulators.

For the first few years in the market, gaming on an 8086-based, "IBM-compatible" PC was a distraction, like playing Snake on a Nokia 3210. But when Intel released the 386 in 1985 PC gaming entered its first Golden Age.

Almost overnight, the 386 made the PC the most powerful and capable home platform, so all it had to do was win the hearts and minds and wallets of Amiga 1000 and Atari ST owners to realise its destiny as the true home - the only home - of the newest and most technically complex games. To win those wallets, PC had to show there were games that the Amiga and Atari couldn't run. Games the kinds of people who spent $7,000 on a Compaq DeskPro would think worthy of their superior intellects. Thus: the flight simulator.

THE FALCON CANNOT HEAR THE FALCONER

Sure, other platforms had, shall we say, aeroplane games. And more power to them. The world would be a poorer place without Afterburner. But the PC allowed actual flight simulation. As in, games where everything took a back seat to modelling the flight dynamics and operation of an aircraft, as close to reality as possible.

We'll revisit Microsoft Flight Simulator (and its cooler younger brother Combat Flight Simulator) in a later Game Changer trip, but I mention it not just because of its dad-cool domination of the space, but also because it reflects the core philosophy of PC flight simulation: obsession.

Obsessive creators, obsessive players. Case in point: In 1987, a mob from Palo Alto called Spectrum Holobyte, released a flight sim called Falcon. It focused on the General Dynamics F-16 Fighting Falcon (obviously) and was an early example of a flight sim that made gamers say "wow, flying a jet fighter is hard work!"

A VAST IMAGE OUT OF SPIRITUS MUNDI TROUBLES MY SIGHT

Falcon 3.0 used military simulator data to make its flight model as realistic as possible, but it was still a game. Falcon 4.0 was, straight up, like being in the USAF. In 1998 it looked amazing and ran like a dog's breakfast. Yet its dynamic battlefield and incredible detail meant modders refused to abandon it. From the miasma emerged Benchmark Sims, a team that created new theatres, fixed bugs, upgraded visuals, and did so much to Falcon 4.0 that its eventual publisher (Atari) sent a cease-and-desist letter. Fortunately, Atari got distracted by its endless financial problems, and BMS exists to this day.

THINGS FALL APART, THE CENTRE CANNOT HOLD

But Falcon was also ported to the Amiga and Atari because there just weren't that many PC gamers to keep a developer afloat, back in 1987. Even worse, the Amiga and Atari editions were arguably better - they had a very early implementation of the idea of a "dynamic battlefield", where stuff you blew up in one mission stayed blown up in the next.

By 1991 though, the tables were turning. There were even more PC brands available, prices of 386-based machines had descended from astronomical, through cislunar, to merely stratospheric, and there were now enough PC gamers to justify exclusive titles.

Not that Spectrum Holobyte's magnum opus was deliberately exclusive. Falcon 3.0 (Falcon 2.0 was called Falcon AT and it ran in EGA, so, moving on) shattered paradigms. Spectrum Holobyte embraced a concept that would serve developers well for at least the next 15 years: we don't care what PC you have. If our game won't run on yours, buy a better one.

MERE ANARCHY IS LOOSED UPON THE WORLD

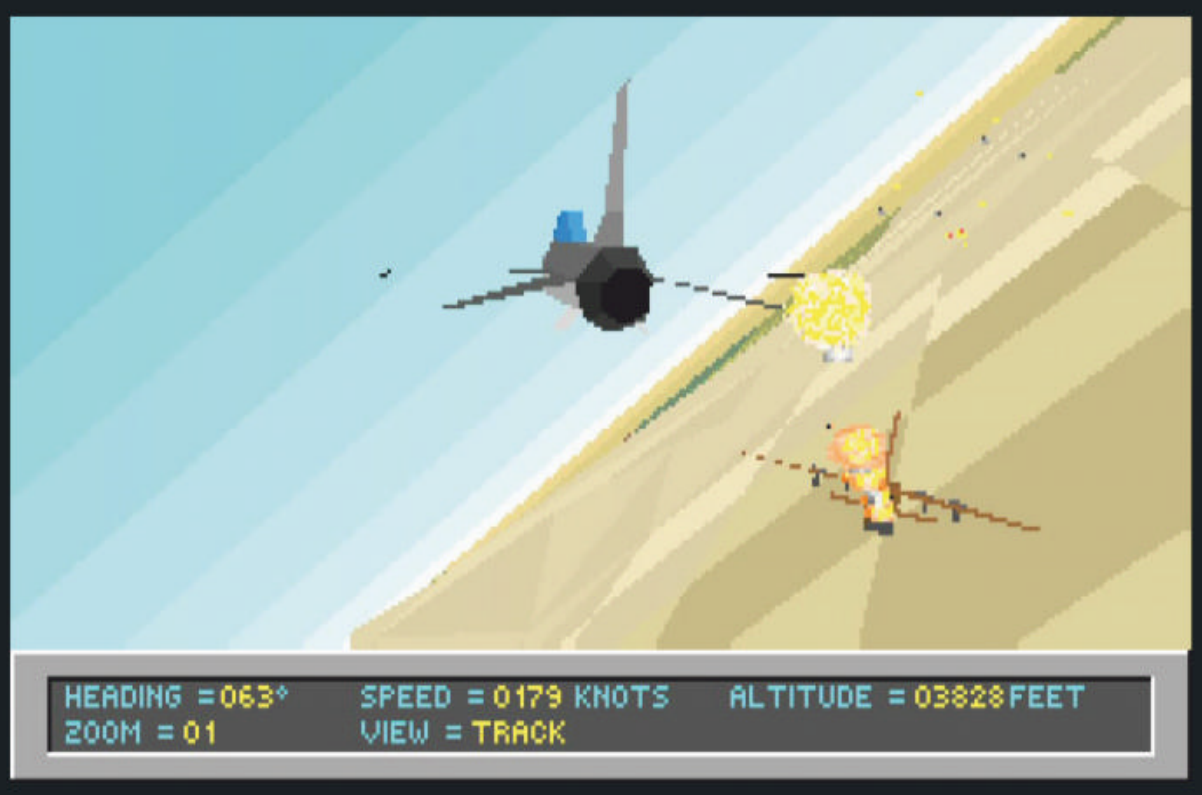
The editor of this magazine bought a better one. He agonised over whether he could justify spending all of his money on a 386, or all of his money plus some additional money he'd have to get somewhere, on a 386 with a math coprocessor.

Falcon 3.0 used - or at least Spectrum Holobyte claimed it used - flight data from military simulators. What does that mean? It meant the game had a "high fidelity flight mode". And that basically meant Falcon 3.0 did more maths, thus the editorial agonising over the math coprocessor.

So what was Falcon 3.0 like to play? As far as anyone who bought it could tell, it was like trying to fly an actual F-16 using a consumer-grade joystick and a keyboard. That the F-16 really does have a highly computerised control system (it was the first fly-by-wire combat aircraft) certainly means that in principle, it should be possible to simulate exactly how the real jet would respond to any given input.

In practice, of course, Falcon 3.0 had to work within the limitations of the 386 and 486 platforms. Resolution? 640x400. FPS? Not really a thing. Textures on objects? Not invented yet.

But because the PC could do numbers, so many numbers, it made the collection of geometric shapes that vaguely resembled an F-16 fly like an F-16.



EVERYWHERE THE CEREMONY OF INNOCENCE IS DROWNED

Falcon 3.0 showed that the PC could be serious (realistic simulation) but that this didn't need to mean boring (Cessna 172 at Chicago Meigs ugh).

Since Falcon 3.0, the PC has been the only home of the properly serious military flight simulator. Throughout the 1990s and early 2000s, so many shooty-plane-games came and went. They were mostly trend-based. First it was WW2 (Aces of the Pacific/Over Europe), then it got really specific in the F-22 (various, including Gears of War's DICE), then the IL2-Sturmovik for some reason. Even the SU-27 had a long, long day in the sun.

Flip forward to 2019, and the only real game in town is DCS - Digital Combat Simulator. All the planes, all the theatres, all the multiplayer F/A-18 missions where everyone but you bombs from 1000 feet despite you reminding them constantly...

SURELY SOME REVELATION IS AT HAND..

The technological gulf between DCS and Falcon 3.0 is immense, but spiritually, they're the same kind of software. Combat flight simulators on the PC are one of the few types of games that harness and justify all that power. The only thing you need to justify is the cost of all the joysticks, pedals, head-trackers, and (these days) VR goggles these games, inevitably, make you want to guy. PC

Next Issue

ISSUE 278 ON SALE

SEPTEMBER 2019

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